

## LITERATURE OF MANUFACTURERS

Catalogues, bulletins and other direct advertising material recently issued. Manufacturers are requested to send copies of new trade literature promptly to Electric Refrigeration News.

### Alpinice

The Rauf Manufacturing Co., Bogota, N. J., has issued a folder describing Alpinice electric refrigeration. Two cabinets, one with porcelain exterior and interior and the other with porcelain interior and lacquer exterior are illustrated. The all porcelain model has food storage capacity of 7 cu. ft., while the other has a capacity of 5 cu. ft. A single cylinder compressor equipped with a 1-6 h.p. motor is also shown.

### Kelvinator

Three folders received from the Kelvinator Corp., Detroit, cover its complete line of domestic and commercial refrigeration. One devoted to domestic refrigeration contains photographs of twelve all-porcelain models of "Sealtite" construction. These models have food storage capacities ranging from 4½ cu. ft. to 11½ cu. ft. In the apartment line eleven models are shown, five of which are all-porcelain models. Four models have Parkerized steel exteriors finished in white duco and interiors of white enamel. The folder covering the Kelvinator commercial line contains photographs of seven cross fin cooling units, with daily ice melting capacities varying from 112 lbs. to 380 lbs. and nine compressors equipped with motors from 1/6 to 1 horsepower. In addition, a number of cooling coils and multiple evaporators and cooling coils are also presented.

### Kitchencraft

The December number of the Kitchencraft News, which is issued by Wetzel-Vivian Co., Chicago, Ill., is devoted to a discussion of Dry-Zero insulation. It describes how this insulation aids in cutting operating costs. In addition the Kitchencraft line is also discussed.

### Smoot Holman

The Smoot Holman Co., Inglewood, Calif., has issued two broadsides which illustrate its line of display cases for installation in grocery stores, meat and fish markets and delicatessens. One of the broadsides announces a new blue and white all porcelain-enamel finish display case for delicatessens. Photographs of

five models are contained in the broadsides and diagrams show correct illumination and how the overhead system of refrigeration operates.

### Lorain Automatic Icer

A booklet received from the Lorain Automatic Icer Co., Lorain, Ohio, describes its line of domestic electric refrigerators. Seven cabinets with food storage capacities ranging from 4½ cu. ft. to 15 cu. ft. are illustrated. These models are offered in five color combinations. In the compressor line, two models are shown. These are equipped with motors of ¼ and 1/3 hp.

### Ottenheimer

Three broadsides issued by Ottenheimer Bros., Inc., Baltimore, Md., describe the new Oreole triple display service and sales refrigerator and the Reolite display case. The service and sales refrigerator has 19½ feet of refrigerated display on its three shelves. Several diagrams show the construction of the various models. These diagrams also illustrate the frigicycle and cold ray illumination featured by Ottenheimer Bros.

### Peerless

Nine bulletins issued by the Peerless Ice Machine Co., Chicago, Ill., are devoted to a description of the Peerless line of automatic controls and water regulators. Included in this line are diaphragm valves, water valves and circuit breakers, multi-stage expansion valves, back pressure regulators, antifreeze brine control valves and room temperature control expansion valves. Each control or valve is illustrated and a discussion of how each operates is included.

### Geo. D. Roper Corp.

The Geo. D. Roper Corp., Rockford, Ill., has recently published a catalog describing and illustrating rotary pumps for use in circulating liquids in ice cream plants and cold storage plants. The company manufactures Trahern rotary gear pumps, with capacities from one to 250 gallons per minute. The catalog gives horse power and performance curves for each model.

### Offer New Needle Valve

The Pratt & Cady division of the Reading Steel Casting Co. have developed a new type of needle valve suitable for small refrigerating units, oil burners and measuring devices. The valve is made of bar stock bronze and the handwheel of malleable iron. Valves are in both angle and globe types.

## Another Unusual Merchandising Combination Proves Successful



Rugs, electric refrigerators, and Sparklet syphons, vie for place in this English Rug Shop, 10443 Jasper Ave., Edmonton, Canada. The Shop is an associate organization of the City Coal Co., Ltd., Calgary, Canada, who are Welsbach distributors for western Canada.

## REQUESTS FOR INFORMATION

Readers who can assist in furnishing correct answers to inquiries or who can supply additional information are invited to address Electric Refrigeration News, referring to the query number.

### Ice Cube Trays

Query No. 193—A reader in Missouri requests the following information, "We are wondering if you could furnish us a list of names of the manufacturers of ice cube pans or trays for domestic refrigerators."

Note—The Pedders Mfg. Co., 57 Tonawanda St., Buffalo, N. Y., and the Geuder, Paeschke & Fry Co. make ice cube trays for domestic refrigerators.—Editor.

### Small Ice Cream Freezers

Query No. 194—A reader in Washington asks, "We are interested in ice cream freezers, particularly of the smaller sizes and would appreciate it if you would kindly advise some of the manufacturers to communicate with us."

### Compressor Parts

Query No. 195—A Southern concern specializing in refrigeration service writes, "Can you furnish us with the name of the manufacturer of Tilton fabric belts to fit an old model Servel. Also can you give us the name of a manufacturer making parts to fit Frigidaire compressors, such as pistons, pins, rings, eccentrics and other parts for the different models."

Note—Servel Sales, Inc., informs us that this type of belt, if used, was not standard equipment and that the standard for the flat belt machine has always been a leather belt. The various sizes of flat leather belts may be purchased from Servel, Inc., at a list price of \$3.60 each, F. O. B. Evansville.—Editor.

### Refrigerator Shelves

Query No. 196—A reader in Virginia writes, "We have a customer who is in the market for five refrigerator shelves to be 1' 7" wide by 2' 3" long, made of tinned or nickel-plated copper wire. Will you send us the names of concerns manufacturing shelves?"

Note—The following concerns manufacture shelves for refrigerators: Collis Co., Clinton, Iowa; Peerless Wire Goods Co., Lafayette, Ind.; United Steel & Wire Co., Battle Creek, Mich.; and L. A. Young Industries, 9200 Russell St., Detroit, Mich.

### Rubber Ice Cube Trays

Query No. 197—A reader in California sends in the following request, "We are very much interested in securing quotations on rubber ice trays. We would be glad to have you turn this inquiry over to the party advertising 'Why glue cubes to metal' in your recent issue. The trays we want should be 5½ or 5¾ wide overall, by either 10½ or 10¾ long with cube grids."

Note—G. M. Dwelliey, Inc., 235 Curtiss Bldg., Detroit, Mich., are exclusive distributors for Flexo Tray rubber ice trays.—Editor.

### Universal Hanger

Query No. 198—A firm in Missouri writes, "Can you advise us who makes a universal hanger, which will enable us to adapt our coils to the bolt holes in the average ice box?"

Note—The Pedders Mfg. Co., 57 Tonawanda St., Buffalo, N. Y. and the Motors Metal Mfg. Co., 5936 Milford St., Detroit, Mich., make universal hangers for installing cooling coils in cabinets.—Editor.

### Methyl Chloride

Query No. 199—A subscriber in Illinois inquires, "Can you give me the address of a company handling methyl chloride?"

Note—The Roessler & Hasselacher Chemical Co., Niagara Falls, N. Y., manufacture methyl chloride.—Editor.

### Equipment for Dehydrating Copper Tubing

Query No. 200—A reader asks, "We are desirous of securing suitable equipment at a reasonable cost, to enable us to dehydrate copper seamless tubing to comply with the requirements of the manufacturers of electric refrigeration. Can you give us a list of producers of this class of equipment?"

## "PLEASE CHANGE MY ADDRESS"

Recent movements of subscribers as indicated by changes in mailing addresses.

Agrell, F. R., from 445 E. Erie St., to 151 N. Michigan Ave., Chicago, Ill.  
 Alger, Russell A. Jr., from 2228 W. Seventh St., to 216 Architects Bldg., Los Angeles, Calif.  
 Amy, J. P., from 845 Hyperion to 360 N. Ogden Drive, Los Angeles, Calif.  
 Beebe, Wm. W., from 2509 S. Ervay St., Dallas, Tex., to 915 N. Fifth St., Springfield, Ill.  
 Berghwer, Louis A., from 1211 Monendo Dr., Glendale, Calif., to Chas. A. Kolp Bldg., Canton, Ohio.  
 Billhimer, R. M., from 4140 Washington St., St. Louis, Mo., to Apt. 402, Capital Hill Apts., Little Rock, Ark.  
 Bonberg, Milton, from 67 Peach St., to 45 Wilkes Ave., Buffalo, N. Y.  
 Bracken, C. F., from 1427 N. Denver St., Tulsa, Okla., to 426 S. Division St., Ann Arbor, Mich.  
 Buehler, L. J., from 445 East Erie St., to 151 N. Michigan Ave., Chicago, Ill.  
 Clark, E. R., from 1231 So. Carroll Ave., Freeport, Ill., to 1418 Englewood St., Dallas, Tex.  
 Cleveland, Melvin G., from 2021 Rockefeller Ave., Everett, Wash., to Route 1, Box 139, Hartford, Wash.  
 Cohn, R., from 2162 25th St., to 2020 41st St., Astoria, L. I., N. Y.  
 Connors, W. J., from 445 East Erie St., to 151 N. Michigan Ave., Chicago, Ill.  
 Cornell, Katherine G., from Home Service Dept., c/o Kelvinator Sales Corp., Plymouth Rd., to 718 Fisher Bldg., Detroit, Mich.  
 D. & D. Copeland Co., from 249 N. Brand Blvd., Glendale, Calif., to 6117 W. Sixth St., Los Angeles, Calif.  
 Daley, E. A., from 445 E. Erie St., to 151 N. Michigan Ave., Chicago, Ill.  
 Davis, G. C., from 77 Pingree St., to 2102 Harding, Detroit, Mich.  
 Ellerbusch, from 20411 Cardonia, to 19411 Yacoma, Detroit, Mich.  
 Feuley, Frank J., from General Del., to P. O. Box 480, Sacramento, Calif.  
 Gard, Dwight, from 1455 Forsythe St., Beaumont, Tex., to 829 De Queen Blvd., Port Arthur, Tex.  
 Haney, A. A., from Box 1731 to 1808 St. Louis Ave., Fort Worth, Tex.  
 Herztam, from 207-09 Wilshire La Brea Bldg., to 8115 Beverly Blvd., Los Angeles, Calif.  
 Holladay, W. L., from Room 301, 2404 West Seventh St., to c/o The George Belsey Co., 406 Architects Bldg., Los Angeles, Calif.  
 Hopper-Kelly Co., from 945 Broadway, to P. O. Box 1236, Tacoma, Wash.  
 Howlett, W. L., from 727 Monadnock Bldg., 53 Jackson Blvd., Chicago, Ill., to 216 Tremont St., Boston, Mass.  
 Johnson, E. L. Co., Inc., from 1051 Hamilton St., Allentown, Pa., to 518 W. Broad St., Bethlehem, Pa.  
 Judge, L. H., from 14997 Madison Ave., to 2140 Morrison Ave., Cleveland, Ohio.  
 Keyte, F. C., from 213 North Seventh St., to 414 E. Second St., Provo, Utah.  
 Kirkpatrick, W. L., from 2228 W. Seventh St., to 216 Architects Bldg., Los Angeles, Calif.  
 Knight Copeland Co., from 1175 E. Colfax, to 635 E. Colfax, Denver, Colo.  
 Korright, H. G., from P. O. Box 137, Des Moines, Ia., to General Delivery, Louisville, Ky.  
 Maginniss, Thos. H., from 160 E. Ill. St., to 5718 Winthrop Ave., Chicago, Ill.  
 Malcom, H. A., from 445 East Erie St., to 151 N. Michigan Ave., Chicago, Ill.  
 Massa, R. F., from 1085 Park Ave., to 214 E. 41st St., New York, N. Y.  
 Newhall, E. W., from R. F. D. No. 2, Box 19, Willow Grove, Pa., to Waltham, Mass.  
 Northwestern Ohio Servel, Inc., from 317 N. Erie St., to P. O. Box 157, Toledo, Ohio.  
 Paton, J. R., from Cannon Drive at Brighton Way, to 1434 Wilshire Blvd., Beverly Hills, Calif.  
 Powell, J. A., from 237 Jamaica, Western Avalon, Pa., to 383 Marlborough St., Brooklyn, N. Y.  
 Robinson, Ross C., from 6444 Belfast Ave., to 9108 Sorrento, Detroit, Mich.  
 Simplex Appliances Co., from 30 East 42nd St., to 460 W. 34th St., New York, N. Y.  
 Smith, C. G., from The Plaza Hotel, Milwaukee, Wis., to 325 W. Main St., Madison, Wis.  
 Tebeau, F. H., from c/o Williams Oil-O-Matic Htg. Co., Bloomington, Ill., to 203 Sherman Bldg., 93 Massachusetts Ave., Boston, Mass.  
 Wheeler-Green Elec. Co., from 260 East Ave., to 33 St. Paul St., Rochester, N. Y.  
 Changes of Address Omitted From the Previous Issue  
 Baltzer, Victor J., from 1514 Locust St., to 4405 W. Pine Blvd., Apt. 811, St. Louis, Mo.  
 Beamish, J. C., from Kentucky, Tenn. L. & Pwr. Co., Bowling Green, Ky., to Suite 9, 103 Hemenway St., Boston, Mass.  
 Bedell, Louis, from 1534 Sunset Blvd., to 2869 W. Pico, Los Angeles, Calif.  
 Billhimer, R. M., from 6820 Delmar St., St. Louis, Mo., to General Delivery, Little Rock, Ark.  
 Branden, B. A., from 492 Peachtree St., to Box 113, Atlanta, Ga.  
 Brennan, P. Jr., from 211 East 68th St., to 242 West 69th St., New York, N. Y.  
 Carryl, H. M., from 220 N. Penn St., West Chester, Pa., to 2109 F. St., N. W., Washington, D. C.  
 Cole, Rex, Inc., from 107-28 Continental, Forest Hills, N. Y., to Jamaica, N. Y.  
 Cook, D. M., from 267 Main St., Hackensack,

## THE CONDENSER

ADVERTISING RATE fifty cents per line (this column only).

SPECIAL RATE if paid in advance—Positions Wanted—fifty words or less, one insertion \$2.00, additional words four cents each. Three insertions \$5.00, additional words ten cents each. All other classifications—fifty words or less, one insertion \$3.00, additional words six cents each. Three insertions \$8.00, additional words sixteen cents each.

### POSITIONS AVAILABLE

REFRIGERATOR CABINET SALESMEN WANTED by a concern of thirty years' reputation, high rating and of national reputation. Following an expansion sales policy, new territory available. Must be able to earn \$5,000.00 or more per annum, must also furnish bond. Applicants who can meet our requirements will be given a personal interview. When writing please state in full all your qualifications, personal and general. Box No. 139.

### POSITIONS WANTED

I DESIRE to connect with distributor in charge of sales. Familiar with all phases of business, also associate dealers. Available 30 days' notice. Address Box No. 147.

REFRIGERATING SALES ENGINEER. With sales experience on the Continent, in South America, Mexico, Cuba and here seeks connection with representative company who wishes to build up the export field here or abroad. Good connections in Germany, Argentina and Mexico. Linquist. Box No. 148.

DISTRICT MANAGER or sales manager; thoroughly familiar with electric refrigeration; several years experience with Kelvinator in capacity of district manager and sales manager; wants to make connection with distributor; excellent references as to character, integrity and ability; available on short notice. Address Box No. 149.

GRADUATE MECHANICAL ENGINEER with 3 years experience on service, commercial and domestic installations, service repair and sales, seeks a connection with a large distributor or manufacturer for a position in Europe or South America. Speaks four languages. Available end of March. Address Box No. 150.

### FOR SALE

NORGE franchise for sale. State of New Mexico, and 18 counties in Western Texas. Headquarters and store El Paso, Texas. Many satisfied users of Norge. Established over one year. Stock on hand about \$5,000. All new. Excellent reason for selling. A. J. Strayer Co., El Paso, Texas, 302 N. Stanton St.

## Refrigeration Service Co. Inc.

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## PATENTS

Searches, reports, opinions  
 by a Specialist in

## Refrigeration

H. R. VAN DEVENTER  
 Solicitor of Patents  
 Refrigeration Engineer  
 342 Madison Ave., N. Y.

N. J., to 598 Central Ave., East Orange, N. J.  
 Daniels, Nelson T., from 4029 W. 22nd St., to 7138 W. Langley, Chicago, Ill.  
 Doher-Cutler, Inc., from 1087 26th, Des Moines, Ia., to Livingston Apt., Omaha, Neb.  
 Hallock, Thomas P., from 492 Peachtree St., to Box 113, Atlanta, Ga.  
 Hauer, Henry H., from 114 S. Parkview, Marshall, Mich., to 194 Locust St., Milwaukee, Wis.  
 Haynes, F. F., from 2432 18th Ave., Rock Island, Ill., to 629 Brinton Ave., Dixon, Ill.  
 Heideman, F. J., from 2441 Field, Detroit, Mich., to 319 Salem, Dayton, Ohio.  
 Hinkle, C. J., from 3125 Ave. K., to 713 Woodrow, Fort Worth, Texas.  
 Jones, Floyd I., from 10 De Hart St., Morristown, N. J., to 441 Kearny Ave., Kearny, N. J.  
 Lybeck, Ablin R., from 1662 Seventh, to 1237 Benton, Rockford, Ill.  
 Lyons, Owen P., from 55 Murdock St., Brighton, Mass., to Corn. Wash. & Elmwood Ave., Dedham, Mass.  
 McDonald, E. R., from 1818 S. Grand Ave., to 1204 W. Seventh St., Los Angeles, Calif.  
 Moister, Geo. W., from 492 Peachtree St., Atlanta, Ga., to 36 S. 17th St., Philadelphia, Pa.  
 Morris, F., from 124 Garrard St. Covington, Ky., to 311 Slair, Ludlow, Ky.  
 Morton, James E., from 270 Tennyson Ave., to Washington Rd. & Cedar Blvd., Pittsburgh, Pa.  
 Osbourne, W. A., from 39 Turner Place, to 1902 E. 21st St., Brooklyn, N. Y.  
 Pettire, Frank D., from 1200 Lincoln Ave., Evansville, Ind., to 1560 Laurel Ave., Bridgeport, Conn.  
 Raymond, L. C., from 4633 Kenmore to 1046 Dakin St., Chicago, Ill.  
 Reusch, A. W., from 1441 15th St., Huntington, W. Va., to 117 Grafton, Dayton, Ohio.  
 Rice-Tuck Refrigeration, Inc., from 4452 Cass Ave., to 10220 Plymouth Rd., Detroit, Mich.  
 Sowards, E. H., from 304 11th Ave., Huntington, W. Va., to Prestonsburg, Ky.  
 Sperry, F. H., from Box 1092, to General Delivery, Omaha, Neb.  
 Teall, R. F., from 616 Temple St., Detroit, Mich., to 4112 North Haven, Toledo, Ohio.  
 Tinkey, O. C., from 205 N. Highland Ave., Pittsburgh, Pa., to 2106 Euclid Ave., Cleveland, Ohio.

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 550 Maccabees Bldg., Detroit, Mich.

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Place additional names on separate sheet and attach to this coupon; 6 subscriptions for six months each or 12 subscriptions for 3 months each.

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# ELECTRIC REFRIGERATION NEWS

The business newspaper of the refrigeration industry

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PRICE FIFTEEN CENTS

## G. E. OPENS SERIES OF 44 REGIONAL SALES CONFERENCES MAR. 1

Fourteen Company Officials to  
Spend Month Conducting  
Meetings

STARTING with the March 1 meeting for the Lake States General Electric Supply Co., Toledo, Ohio, General Electric refrigeration officials will cover the entire United States in a series of 44 regional sales conferences.

Large, especially constructed theatrical trunks have been constructed and contain standard equipment for conducting the meetings and presenting the sales messages to distributors and dealers. Special motion pictures depicting General Electric Co. progress, animated films showing the operation cycle of the hermetically sealed G. E. refrigerator, maps and charts, form a part of the equipment.

Talks by the General Electric men attending the various conferences will be illustrated by series of slides, the thought being that the information given distributors and dealers will make a more lasting impression if it is presented to the eye as well as the ear.

Headquarters men are to cover the territory in the comparatively short period from March 1 to April 2.

Those who will conduct the various meetings are: A. C. Mayer, G. C. Wasson, L. R. Edwards, W. J. Daily, F. M. Corliss, J. J. Donovan, W. E. Landmesser, W. M. Timmerman, A. R. Green, A. A. Uhalt, A. T. Taft, M. F. Mahoney and H. T. Hulet. W. E. Underwood, of Lord, Thomas & Logan, advertising agency handling the General Electric refrigerator account, will be present at some of the meetings and will talk on advertising and its relation to distribution and sales.

### G. E. Production Greatly Increased

"This series of regional meetings marks the General Electric company's second year in the electric refrigeration business," P. B. Zimmerman, general sales manager of the department, said. "In this short time we have built up a fine distributor and dealer organization serving the entire country. We have gone through the extremely trying period of having the demand for refrigerators greatly exceed our highest possible production. Now this has been remedied. Production efficiency has been perfected and our three factories can now easily handle our present demand. We are still growing rapidly, but we have nothing to fear. There will be enough machines even if we go over our quotas as set for the year.

"At our recent distributors' conference in Cleveland, our manufacturing and research experts gave the distributors and ourselves every assurance that everything within their power was being done to facilitate production, and their power is great. These quiet spoken men from the factories, reluctant to talk of their achievements are our greatest single asset. They told us that there are hundreds of thousands of square feet in floor space available to the department for expansion and millions of dollars for research and manufacturing improvements.

"The entire General Electric company with its unlimited resources is back of the G. E. refrigerator, and we expect to establish a sales record in 1929.

"We expect from time to time to bring out new and revolutionary equipment. The hermetically sealed unit has been so successful that it can be used to good advantage wherever refrigeration is necessary.

## ICE-O-MATIC FORCES MOBILIZE FOR 1929

E. W. McIlvaine and Stanley C.  
Bell Join Williams Organization

CAREFUL planning of an extensive Ice-O-Matic sales campaign for 1929 has necessitated the creation of a new department in the Williams Oil-O-Matic Heating Corp., Bloomington, Ill., to handle and develop sales of the Ice-O-Matic electric refrigerator.

E. W. McIlvaine, formerly sales manager for Servel electric refrigeration in Indianapolis and previously associated for many years with the West Penn Appliance Co., Pittsburgh, Pa., will be manager of refrigeration sales.

Stanley C. Bell, formerly general sales manager of the Champion Electro-Icer Division for the Champion Electro-Icer Co., St. Louis, Mo., will have charge of promotional activities in the field.

Mr. McIlvaine and Mr. Bell have both had wide experience in the electric appliance and specialty selling fields. They anticipate a record year for the electric

## Easter Egg Gives Seasonal Appeal To French Window Display

By Dorothy Dignan, European Correspondent



This Easter idea in window display was used by the Frigidaire distributor at Fontainebleau, France. The shell was painted bright purple and the bow was of gauze ribbon. A baby model refrigerator was used inside and the whole was spotlighted from the bottom of the window.

refrigeration industry due to three outstanding reasons: (1) The increase in demand by the public, (2) the increased goodwill within the industry, and (3) the general improvement in electric refrigeration equipment.

"By the offering of a high class product through the medium of a high caliber sales force we expect to exceed our quota of 1,000 new sales outlets for the year 1929," said Mr. McIlvaine recently.

## HUSSMANN, LIGONIER AND STEINER MERGE

The Harry L. Hussmann Refrigerator Co., St. Louis, Mo., has consolidated with the Ligonier Refrigerator Co., Ligonier, Indiana, and the Steiner Manufacturing Co., St. Louis, to form a corporation with assets of approximately \$3,000,000 for the manufacture and distribution of complete market, grocer and delicatessen equipment.

The new company will be known as the Hussmann-Ligonier Co. and has been incorporated under the laws of Delaware with John E. Riley as president.

The corporation is authorized to issue 150,000 shares of no par value stock, of which there will be 84,000 shares outstanding. Forty-two thousand shares of the stock will be exchanged, share for share, for the old stock of the Harry L. Hussmann Refrigerator Co., and 42,000 will be offered to the Hussmann stockholders. All stock not taken by the Hussmann stockholders will be acquired by an underwriting syndicate.

In addition, the new Hussmann-Ligonier Co. will issue \$1,000,000 in debentures. Application will be made to list the stock and debentures on the St. Louis and Chicago stock exchanges.

It is stated that the combination of the businesses of these companies, handling allied lines, will result in increased output, lessened expense, and therefore greater net earnings.

The Hussmann Co. and the Ligonier Co. have been competitors in the field of manufacture and distribution of market equipment and supplies. It was announced that those who have been identified with the Indiana corporation will participate in the new management.

The new company will have representatives covering all parts of the United States and contemplates an expansion of its selling forces.

The officers of the Hussmann-Ligonier Co. are: J. E. Riley, president; Wm. T. Tuffil, vice-president; Don C. McCord, vice-president; Sol Henoch, vice president, and P. E. Weeke, secretary and treasurer.

## UNDERWRITERS O-KAY FRIGIDAIRE MULTIPLE SYSTEM EQUIPMENT

OFFICIAL approval of equipment and fittings used in Frigidaire multiple refrigerating systems was given last week by the Underwriters Laboratories of Chicago. This approval followed over a year of special tests which were conducted to determine its dependability and safety. Frigidaire Corporation is the first to obtain such approval of its multiple system equipment from the Underwriters Laboratories. Other manufacturers are expecting similar approval within a short time.

## CONTENTS OF THIS ISSUE

	Page
Index of advertisers.....	47
New electric refrigeration machines.....	4, 5, 6, 8, 10, 12, 13, 14, 15, 16, 20, 39
New cabinets, cooling cases, and accessories.....	8, 42, 44, 45
New sales literature.....	6, 13, 14, 15, 16, 48
Refrigeration patents issued since January 1.....	1, 33, 36
Commercial refrigeration.....	5, 6, 8, 10, 12, 20, 26, 31, 33, 36, 39, 42, 44, 45, 48
Selling methods for the distributor and dealer.....	2, 4, 18, 27, 30, 37, 41, 42
Advertisers and agencies using Electric Refrigeration News, 1928-29.....	46
Distributor news.....	2, 18, 22, 28, 39, 41, 42, 43, 44, 47, 48
New control devices.....	8, 32
Insulation.....	28, 47
Multiple installations.....	4, 24
Gas refrigeration.....	6, 28, 30
Food protection.....	31
Special applications.....	2, 5, 26
Central station selling plans.....	4, 40
News for service and installation men.....	32, 43
Electric refrigeration in the kitchen.....	41
New distributors and dealers.....	42
Directory corrections.....	42
Changes of address.....	48
Convention dates.....	42
Exports of electric refrigerators.....	8
Foreign news.....	5, 8, 18, 26
Editorial, "Public Confidence".....	24
Requests for information.....	48
Production and sales data.....	6, 20, 45
Refrigerator test data.....	2

This Issue—12,000 Copies

## MANUFACTURERSEXTEND LINES OF DOMESTIC AND COMMERCIAL REFRIGERATION EQUIPMENT

Marked Improvements in 1929 Units  
Indicate Keen Competition for Big  
Volume Business this Season

## N. E. L. A. EXHIBITION TO OPEN THREE DAYS EARLIER THIS YEAR

Change Made to Tie In With  
Celebration of Invention of  
Incandescent Lamp

THE exhibition committee of the National Electric Light Association announces that the exhibit which is held in conjunction with the annual N. E. L. A. convention at Atlantic City, N. J., will open this year two days ahead of the schedule. On Friday evening, May 31, the exhibits will be thrown open for inspection by the general public from the balconies of the main auditorium. Visitors will not be admitted to the exhibition floor at this time. On June 1 and 2, the exhibits will be open to general inspection from noon on. Convention activities are scheduled to get underway on June 3.

The moving forward of the exhibition dates is due to the festivities which the electric light interests throughout the country are planning in every community to celebrate the anniversary of the incandescent lamp. It is 50 years since its invention by Thomas A. Edison. Atlantic City will open this celebration with a Festival of Light as its contribution to the N. E. L. A. convention and the program for "Lights Golden Jubilee."

This year Atlantic City celebrates its 75th anniversary as a municipality, and has postponed until May 31 its main event, the formal dedication and opening to the public of its \$15,000,000 Municipal Auditorium. It is planning an extensive advertising campaign, and it is expected that a large number of people will be attracted to the city during that week.

On Saturday evening, June 1, the grand inaugural ball will be held in the new auditorium ballroom. Exhibitors at the convention this year will have the opportunity to present their products to visitors coming from all parts of the country.

No increased charge will be made for the three extra days of exhibit privilege provided by the new schedule.

THIS issue, the "Annual New Equipment Number" of ELECTRIC REFRIGERATION NEWS, reflects the tremendous activity in the manufacturing branch of the industry and the confidence of executives that 1929 will be a year of high record sales. The growing popularity of electric refrigeration for both domestic and commercial applications is being felt in terms of advance orders greatly in excess of those placed at this time during any previous year.

Announcements regarding this issue of the News have been mailed to 20,000 architects and building contractors in all parts of the country. To each has been offered a copy of this issue on request. This special service is being rendered in order to assist these important buying influences in securing the detailed information regarding new lines of equipment—information so much needed for intelligent planning of modern homes, apartments, commercial, industrial and public buildings.

The following pages give a broad picture of the types and sizes of units available to meet the varied conditions and requirements of the market.

## DUNN CALLS MEETING FOR DISCUSSION OF REFRIGERATION WEEK

Refrigeration Committee Meets in  
Chicago, March 31

C. L. DUNN, chairman of the Refrigeration Committee of the National Electric Light Association, announces that a meeting of that committee will be held Thursday morning, March 21, at the Edgewater Beach Hotel in Chicago, Ill. Work on the national promotion plan for "Refrigeration Week" is progressing rapidly and it is expected that a discussion of the plan will take place at this session.

This meeting will be held in conjunction with Commercial National section, N. E. L. A., which meets at the Edgewater Beach Hotel on March 20-21. The Great Lakes division of the N. E. L. A. will also hold a merchandising conference there on March 19-20. The executive meeting of the Commercial National section is scheduled to be held on March 22.

## UNFILLED ORDERS FOR COPELAND SHOW BIG GAIN OVER LAST YEAR

Unfilled orders of the Copeland Products, Inc., were seven times greater on February 25 than those of the same date a year ago, according to W. D. McElhinny, vice-president in charge of sales. Day and night shifts have been established at the factory in Detroit. Reports from the field indicate a steadily increasing amount of business.

## PORTLAND, ORE., TO DRAW UP REFRIGERATION CODE

At a recent conference between the city building bureau and representatives of electric refrigeration companies, which was held in Portland, Ore., it was decided that a code governing refrigeration installations should be drawn.

A committee to be appointed will be made up of two representatives of ammonia machines, two of smaller units, one from the building division of the city, one from the board of fire underwriters and the city fire marshal.



## New York Laboratory Publishes Results of Tests on Ice and Electric Refrigerators

THE Ekroth Laboratories, Inc., New York City, an independent organization for scientific research, have published some results on testing foods in two refrigerators. One refrigerator was a General Electric and one an ice box of good grade.

In opening, the booklet telling of the tests quotes Dr. Frederic Damrau from an article in Popular Science Monthly. He wrote, "Food in nine out of ten families in this country is kept in such a way that it is a menace to their health. That statement is not the cry of an alarmist. It is made only after the most exhaustive investigation into household refrigeration ever undertaken anywhere in the world; an investigation which reveals the startling fact that, in most American homes, food frequently becomes unwholesome and sometimes even poisonous, because of inadequate refrigeration."

Various foods were used in the test by the Ekroth Laboratories. They were divided into two parts and a half placed in each refrigerator. The foods used were milk, orange juice, bouillon, pork chops and roast beef.

Both raw and Pasteurized milk were tested. In the raw milk the initial bacterial count was 4,300 organisms per cubic centimeter. At the end of the first day the milk kept in the electric refrigerator showed a count of 4,700, and that in the ice refrigerator, 9,400. At the end of the second day that sample in the electric refrigerator had a count of 5,000, and that in the ice refrigerator, 33,000.

Grade B Pasteurized milk was used which had an initial count of 5,000. First

and second day counts from that kept in the electric refrigerator showed 5,400 and 6,400 organisms, while that kept in the ice refrigerator showed 110,000 and 450,000 counts.

Pork chops held in the electric refrigerator were firm, sound and suitable for food at the end of five days, while those in the ice box are described as "badly decomposed, being slimy and giving off strongly noxious odors."

Bouillon was suitable for food after being held 14 days in the electric refrigerator, while that in the ice refrigerator was decomposed and unfit for food at the end of six days.

Orange juice was kept 15 days in the electric refrigerator and was sweet and like fresh juice, while that in the ice box showed a heavy moldy growth at the end of nine days.

The roast beef was kept in wholesome condition for 12 days in the electric refrigerator.

During these tests, room temperature averaged 75.6 degrees, that of the General Electric refrigerator 41.7 degrees, and that of the ice-cooled refrigerator 53.4 degrees.

types of films. They are super-speed, hyper-sensitized, which necessitates their being kept at about a 40° temperature in order to retain the sharpness of impression. If the films are not kept cold, the film will deteriorate and the scenes will be blurred and indistinct, according to the B. K. Sweeney Electrical Co., who made the unique installation.

To prevent the aero-films from becoming spoiled by an uneven temperature, Major Bruce Kistler, commanding officer, arranged to have Lowry Field equipped with a General Electric refrigerator.

## PARKER RUST-PROOF CO. AND WOLVERINE ENAMELING TO MERGE

A proposed consolidation of the Parker Rust-Proof Co., of Detroit, and the Wolverine Enameling Co., of Detroit, will be acted on at a special meeting of the stockholders of the Parker company, to be held at their Milwaukee avenue plant on April 10. A meeting of the Wolverine stockholders is called on the same date.

During 1928 the Wolverine company paid dividends of \$37.50 or 25 per cent on the outstanding common stock. During the same year the Parker company paid \$148,162.50 dividends on its common stock, or \$2.50 a share. The total net profits of the two companies for 1928, after provision for taxes, depreciation and reserves, was \$420,335.09.

The Wolverine Enameling Co. was organized in 1921. Its active executive officers are M. C. Baker, general manager and secretary, and Charles H. Brodt, sales manager and treasurer. The Parker company owns patents on rust-proofing processes for iron and steel. There are companies in France, Germany, Holland, Japan, England and Australia as well as the United States and Canada, operating under the patents.

The board of directors of the consolidated company will be B. D. Chandler, A. V. Foster, George D. Mason, R. C. Bristol, C. H. Awkerman, G. E. Luke, M. C. Baker and W. M. Corneliuss.

## VENTILATING ENGINEER PREDICTS REFRIGERATION WILL BE USED IN MINES

By placing a specially designed refrigerating and air-treating unit underground near workers in a mine, mining can be carried on at greater depths than now possible, predicted R. W. Waterfill, ventilating engineer of Newark, N. J., in a talk before the American Institute of Mining and Metallurgical Engineers at a meeting in New York, Feb. 20.

At present, mines cannot be successfully worked deeper than 7,000 to 8,000 feet because at those elevations workable atmospheric conditions cannot be maintained by circulation of the air alone, said Mr. Waterfill. The specially designed refrigerating service suggested by Mr. Waterfill would cool the air and decrease humidity.

Tests have shown that when the temperature is over 94 degrees Fahrenheit, the wearing of clothing is beneficial, as it promotes cooling through greater evaporation. When the temperature is 100 degrees and the air is saturated with moisture, moving the air with a fan gives no relief. Under conditions of 100 degrees temperature and 100 per cent humidity the work that can be accomplished is only 40 per cent of that when the air is 90 degrees and completely saturated and only 30 per cent of that when the air is 100 degrees and only 60 per cent saturated with moisture.

## CHALLENGE CO. TO OFFER LINE OF CABINETS FOR ELECTRIC REFRIGERATION

Reade E. Wallace has been appointed factory representative in charge of the electric refrigeration division and assistant to L. E. Woods, sales manager of the Challenge Refrigerator Co., Grand Haven, Mich. Mr. Wallace was formerly representative with Rex Mfg. Co., Connersville, Ind.

The Challenge Company will shortly offer a complete line of lacquer and all-porcelain cabinets for the electric refrigeration trade.

## HAJOCA CORP. BROADCASTS TALKS ON REFRIGERATION

The Hajoca Corp., Philadelphia, recently appointed distributors for Electrolux refrigerators in 14 counties in eastern Pennsylvania, has been broadcasting a series of radio talks on automatic refrigeration. The broadcasting has been done over Station WIP, Philadelphia.

The talks have taken up the history of automatic refrigeration, convenience,

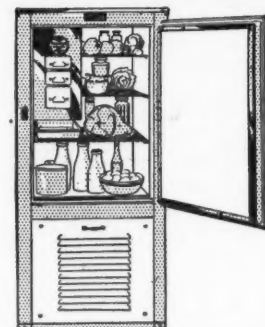
dependability, economy of operation, construction and physical and chemical processes involved in the chilling.

An early installation of the Hajoca Corp. was in the Philadelphia Zoological Garden. C. Emerson Brown, director of the garden, offered to broadcast on the scientific feeding of animals at the Zoo

and the necessity of having their food fresh, pure and in perfect, edible condition. The musical program featured compositions having to do with birds and animals.

The broadcasting programs will be continued by the Hajoca Corp. through the season.

# Copelands for every purpose!

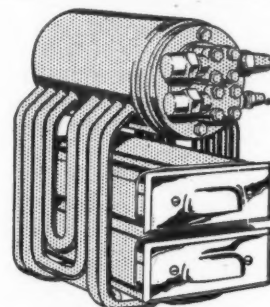
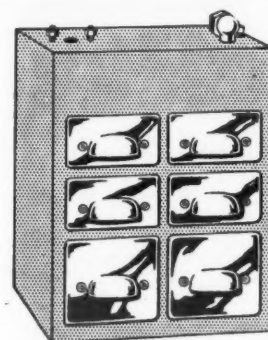


### 3 Lines

of domestic electric refrigeration; \$195 to \$720 at factory; 5 to 20 cu. ft. storage capacity; 108 to 378 ice cubes; optional colors.

### Separate Units

for present ice boxes in many different sizes and prices. Kitchen or "remote" installation. A profitable source of business.

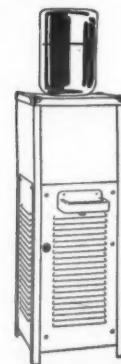
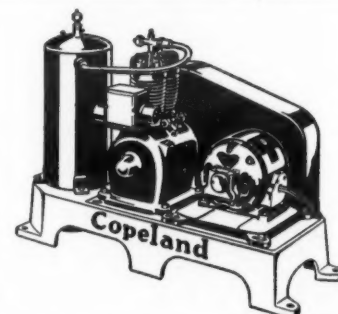


### Multiple

installations for apartments, flats, etc. Entire systems, including boxes. Attractive propositions for builders and owners.

### Commercial

installations for stores, restaurants; fountains, clubs, etc. Utmost dependability; compact units; real economy. Factory counsel and help.



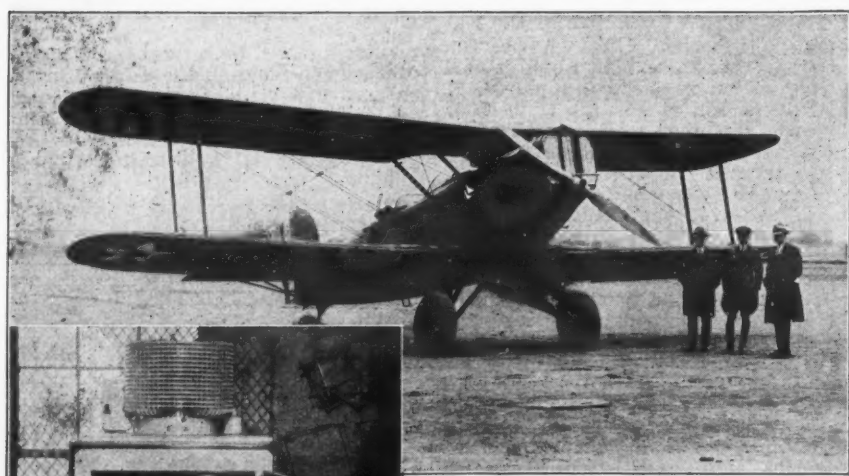
### Water Coolers

for office, store, club, restaurant or factory. Cup or "bubbler" outlet; bottle or city supply. Single installation or multiple hook-up.

Copeland's reputation for dependable, economical and quiet operation is the envy of the electrical refrigeration industry; it is the reason for Copeland's rapid rise to a position of preeminence. Some lucrative territories are being held open until the right type of Distributor or Dealer applies. Inquiries will be held in strict confidence. COPELAND, 630 LYCASTE AVE., DETROIT, MICH.

# Copeland

DEPENDABLE ELECTRIC REFRIGERATION



## DENVER NATIONAL GUARD PROTECTS AERO-FILMS BY ELECTRIC REFRIGERATION

An electric refrigerator is generally thought of in connection with the proper preservation of food, but the 45th Division Air Service of the Colorado National Guard at Denver, have a General Electric refrigerator for the preservation of aero-films.

Aero-films are different from other

refrigeration department of the company was in charge of the conference. Approximately 85 dealers from Minnesota, Wisconsin, S. Dakota, and northern Iowa attended.

The meeting was opened by an address of welcome, followed by a general talk on refrigeration and the presentation of the new Copeland models. A general inspection by dealers closed the morning session.

Luncheon was followed by a talk on commercial refrigeration and commercial credit trust. Commercial cases were discussed by John Althouse, Harry Burman, Detroit, talked on importance of good service condition, and announced a service school on Thursday.

C. H. Arneson, also of Detroit, discussed the advertising policy of Copeland Products, Inc.

## MINNEAPOLIS G. E. DEALERS HOLD CONVENTION, MAR. 4

Dealers of Howard Shannon, Inc., General Electric distributor in Minneapolis, met at the Curtis Hotel, Minneapolis, Minn., for a conference March 4. Among factory representatives at the meeting were A. C. Mayer, manager of the merchandising division; G. C. Wasson, manager of warehouse and distribution service; F. M. Corliss; and M. F. Mahoney.

A photoplay depicting the progress in electrical development from the day of Benjamin Franklin to its present state was shown. Mr. Corliss predicted the time when house cooling service would be as commonly used as kitchen refrigeration.

The convention was in charge of W. H. Taylor, district representative of the General Electric Co.; Howard Shannon, of Shannon, Ind.; and A. S. Dunning, Duluth.

## OMAHA REGIONAL G. E. MEETING MARKS STORZ BROS. 2ND ANNIVERSARY

More than 200 delegates from Nebraska and Iowa attended a regional convention of the General Electric Co. Refrigerator Department, at Omaha, March 4. Those attending were guests at Storz Bros., distributors for General Electric in that territory.

Speakers at the meeting were W. J. Daily, director of sales promotion for General Electric; Frank Corliss, refrigeration engineer; W. H. Taylor, district manager; W. J. Higgins and W. A. Davies of the Omaha organization.

The conference marked the second anniversary of the Storz Bros. in the refrigeration field. Two years ago the organization had a personnel of six, and now employs thirty-five. Arthur Storz is vice president and director in charge; E. J. Nellor is general manager of the Omaha branch; H. P. Kinney is assistant manager; and W. A. Davies, retail sales manager.

In 1927 the Storz Bros. put out 340 refrigerators in the territory; in 1928, a total of 2,500. The quota for 1929 is 6,000. Commercial models of General Electric refrigerators were on display.

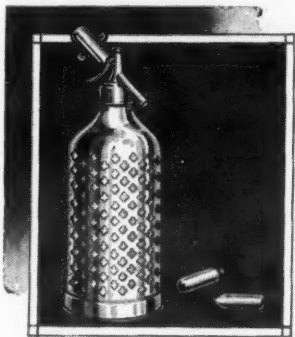
## MINNEAPOLIS COPELAND MEETING ATTENDED BY 85 DEALERS OF NOTT CO.

A one-day Copeland dealers' meeting was held by the W. S. Nott Co., Second Ave. North, and Third St., Minneapolis, March 6. Mr. Nielson, manager of the



# A NEW IDEA

*that turns costly service calls into a direct profit for you!!!!*



**S**IX MONTHS ago the biggest news in the industry was—"Sparklet Aeration solves the vexatious problem of making satisfactory ice cream in the freezing tray without fuss, muss or stirring." Since that welcome announcement the Sparklet Syphon has been endorsed and recommended by all leading refrigerator manufacturers and certificates of

merit have been received from the leading Home Economics Bureaus of the country.

Now comes a suggestion of even more interest. This versatile Sparklets proposition now solves the most baffling problem of the seller of electric or gas refrigerators! It's the service problem we're talking about!

## H. G. Bogart, Akron G E Dealer makes a Profit from Service Men's Sales

The refrigerators of today are better than ever before. Service calls are fewer. Service costs are less than in the early pioneering days. But service calls are still being made. *And they're still costing the dealer a part of his profits!*

But not so in Akron!

H. G. Bogart has made a good record there selling General Electric Refrigerators. He has a lot of present customers. So he told his Service Man about Sparklet Aeration. His instructions were: "Wherever you go on a service call, tell them about this new method of making ice cream in the freezing tray. Sell a Sparklet Syphon and a dozen bulbs if you possibly can, for repeat orders on bulbs will give us the regular contact we want with all our customers."

Now this Service Man (imagine it) is paying back a profit to Mr. Bogart over and above his own cost to Mr. Bogart.

A Service Man can explain the Sparklets proposition in ten minutes.

## Consolidated Gas Co., N. Y. Uses Sparklets as Premiums to Get New Refrigerator Prospects

Three weeks after a Servel Electrolux is sold by this company, a merchandise man calls on the new owner and, without further ado, says: "Mrs. Brown, allow me to make you this present of a Sparklet Syphon from the Consolidated Gas Company!"

After explaining the Sparklet Aeration method of making ice cream in the freezing tray, and the convenience and economy of making beverages in the home, the merchandise man inspects the other gas-burning appliances in Mrs. Brown's home and suggests new equipment to take the place of old.

When this is done, he asks for a list of Mrs. Brown's friends who have seen her refrigerator, so that he may approach them as a prospect. Does Mrs. Brown refuse him the list?

## She Does Not!

Is Consolidated Gas selling refrigerators?

## They Certainly Are!

If by chance, you are not already taking advantage of Sparklet's remarkable assistance to refrigerator dealers, the two instances related above should cause you to write or wire for a Sparklets representative at once.

# SPARKLETS

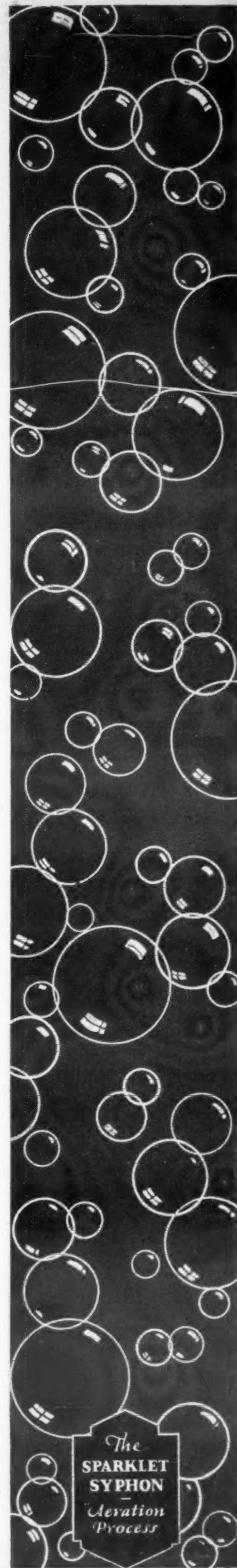
## INCORPORATED

NEW YORK, 19 West 44th Street, Headquarters    CHICAGO, 900 Rush Street    ST. LOUIS, Victoria Building  
ATLANTA, 411 Norris Building    DALLAS, Allen Building    SAN FRANCISCO, 277-295 Seventh Street

Purveyors of the Sparklet Syphon, Sparklet Bulbs, and Sparklet Syrups, Discoverers of the "Sparklet Aeration" method of making real ice cream in the freezing tray, which has been endorsed and approved by the following:

Manufacturers: General Electric, Servel, Kelvinator, Zerozone, Copeland, Ice-O-Lator, Welsbach, Electro-Kold, Holmes, Universal, Norge

Bureaus: Good Housekeeping Institute, Priscilla Proving Plant, Delineator Home Institute, Household Searchlight, New York Tribune Institute, Shrine Service





## KELVINATOR SHOWS MANY REFINEMENTS IN NEW EQUIPMENT

Cabinets Offer New Features—Compressors Are Quiet

KELVINATOR CORPORATION, Detroit, announces its 1929 line as being one which appears essentially the same as in previous years but in which have been incorporated improvements and refinements. The fundamentals of construction and design which have proved their value in past years have been retained.

The 1929 line of cabinet Kelvinators has been improved in construction and appearance by the use of hardware of new design and by the elimination of panel joints at many of the corners. Drain pipes have been eliminated on the Sealite line of cabinets and defrosting trays substituted. Ice cube capacities have been increased; 15 cube trays being replaced by 21 cube trays and 21 cube trays by 27 cube trays. Kelvinator has standardized on Flexo Tray, the new rubber freezing tray which makes it a simple matter to remove any number of ice cubes desired without running warm water over the tray.

In addition to the Kelvinator Model P and Sealite, self contained cabinets, a complete line of apartment house models for multiple installation is available.

The new quiet Kelvinator condensing unit is powered with 1-6 and 1-4 h. p. motors which start, stop and run quietly. The motor is mounted in a rubber cradle and rubber pads are on the brush mechanism. In addition to improving the quietness of operation it is claimed that efficiency has been considerably augmented and the overload capacity increased about 20%.

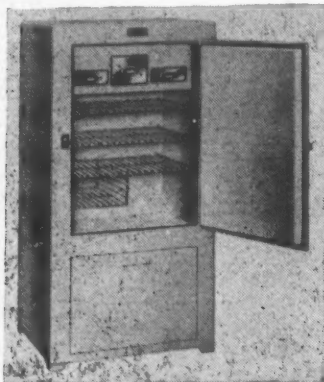
The new Kelvinator commercial line is simplified and improved and although decreased in number of units its range of application is increased. A feature of the new line is the Model AK, a four-cylinder air cooled outfit operated by a 1 h. p. motor. Kelvinator cooling units, including the new cross fin coil, are available for every type of commercial installation.

## NEW COMMERCIAL & DOMESTIC UNITS ARE ADDED BY ABSOPURE

Princess Domestic Model is Most Recent Addition

THE most recent addition to the equipment offered by the Absopure Refrigerator Division of General Necessities Corp., Detroit, is the Princess self-contained domestic model illustrated here. This model has an exterior of white lacquer and an interior of white porcelain. It provides food storage of 7 cu. ft. and a shelf area of 15.3 sq. ft. Two-inch corkboard insulation is used and the condensing unit compartments is sound proofed. This model is refrigerated by a 1/4 h. p. compressor. Its outside dimensions are: height 56 1/2", width 28 3/4", depth 24".

In addition to the Princess model the Absopure domestic line includes the small compact Baby Grand model with



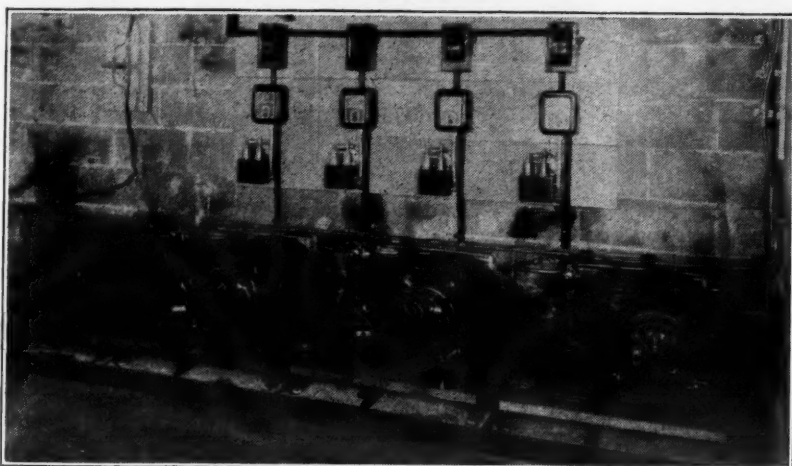
Absopure Princess Model

4.3 cu. ft. of food space, and the American Beauty with 5.4 cu. ft. of food space. To these are added six models of the de luxe line ranging from 7 to 32 cu. ft. This is an all-porcelain line with cabinets by Seeger.

In the commercial line, Absopure has added 1/2 and 1 1/2 h. p. condensing units making a range of ten different models from 1/2 to 1 1/2 h. p. All except the two smallest sizes are available with air or water cooled condensers. Twenty freezing units meeting the requirement of most uses are shown. The large variety of standard sizes reduces the necessity of making up special orders.

The Absopure apartment house line includes condensing units suitable for handling from two to thirty-six refrigerators on one system. Eight different sizes of freezing units also make it possible to handle any size refrigerator that the builder may wish to install.

## Nebraska Power Company Puts Four Kelvinators in Multiple to Handle 49 Apartments



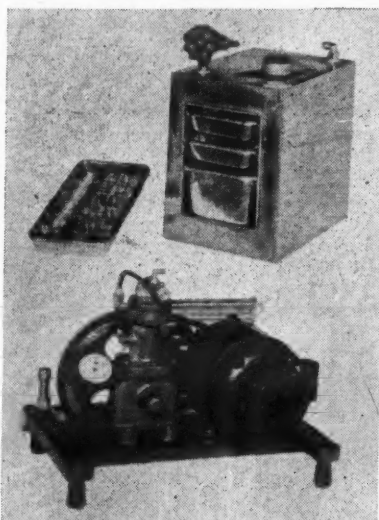
NEBRASKA Power Company recently completed the above installation in the Turner Court Apartments, 3102 Dodge Street, Omaha, in which 49 No. 101 Rex cabinets were connected to three B. B. and one L. B. Kelvinator compressors. The 49 apartments are in two separate buildings which are about 20 feet apart, but connected by an underground passage way. The compressors were installed in the east building about four feet from the east wall directly beneath a window, the bottom of which is

on ground level. The three B. B. compressors have 14, 14 and 15 apartments each, while the L. B. takes care of the six apartments directly above it. The longest run of tubing is 68 feet. Each of the ten risers has a cut off valve at the point where the tubing leaves the basement. Each compressor is equipped with a screen filter to clear the lines of sediment.

This is the sixth multiple apartment house installation made by the Nebraska Power Co. within the last 12 months.

## FREEZEL HAS SMALL SELF-CONTAINED UNIT

The Freezel Corp., Gardner, Mass., is offering in its 1929 line of refrigerating units a self-contained model, the S-5, with 5 cu. ft. of food storage space. The cabinet is made of steel, with exterior finish of grey enamel and interior finish



Freezel Condensing and Cooling Unit

of white enamel. The compressor is of the single-cylinder reciprocating type and is equipped with a 1-6-horsepower motor. Methyl chloride is the refrigerant used in this unit.

In addition to this complete model, the company offers two units. The A unit has a model A-2 low side, suitable for use in cabinets up to 6 cu. ft. food storage space and a model A-6 high side, with a capacity of 4 1/2 lbs. of ice melting per hour. The B unit is equipped with a B-4 low side and a B-10 high side. Complete models with these units installed in Belding Hall cabinets are offered. These models are designated as SK-5, SP-5, SK-7, SP-7, SK-9 and SP-9. The SK type is porcelain interior and enamel exterior, while the SP are all porcelain models.

## NORTH WEST ELECTRIC LIGHT AND POWER ASSN. ADVOCATES ADVERTISING SPECIFIC UNITS

Promoting the sale of electric refrigerators was one of the leading topics of discussion at the recent fourth annual midwinter conference of the commercial section of the Northwest Electric Light and Power Association. The conference was held for three days in Spokane at the Hotel Davenport.

Representatives from throughout the northwest were present. Glenn L. Jackson, Albany, discussed electric refrigeration and other discussions took up electric ranges and electric heating and power.

A committee report advocated that the electric light and power companies advertise specific makes of electric refrigerators in campaigns to stimulate sales, as a more effective plan than advertising electric refrigeration in general.

See Following Pages For Additional Data On New Equipment

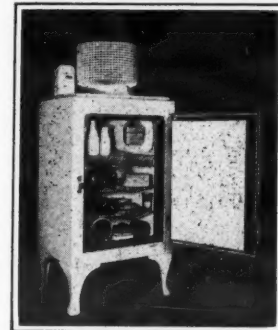
## SPECIAL LOW PRICE OFFER of EXACT FOOD REPRODUCTIONS

These realistic food reproductions will actually help you sell refrigerators. Made from a patented composition that is superior to wax or papier mache because they look better.

The General Electric, Frigidaire, Copeland, McCray, Coldaks, Servel, Seeger, Kelvinator and other refrigerator companies officially recommend exact reproductions to their dealers.

As a special Spring offer we will send express collect the following pieces for only \$16.80.

The only thing that makes a refrigerator look natural and homelike is filling it with food, but food is perishable so the progressive refrigerator dealer has resorted to the reproductions of foods to fulfill this need.



Showing our food reproductions in a General Electric refrigerator. Recommended and used by them.

### Here's What You Get.

One pound of butter.	Lettuce.
T-bone steak.	Apple.
Chicken (dressed or roasted).	Pear.
Tomato.	Eggplant.
Cucumber.	One quart of milk.
Cabbage.	Half pint of cream.
Cauliflower.	
Pepper (red or green).	
Grapefruit (half or whole).	
Orange.	

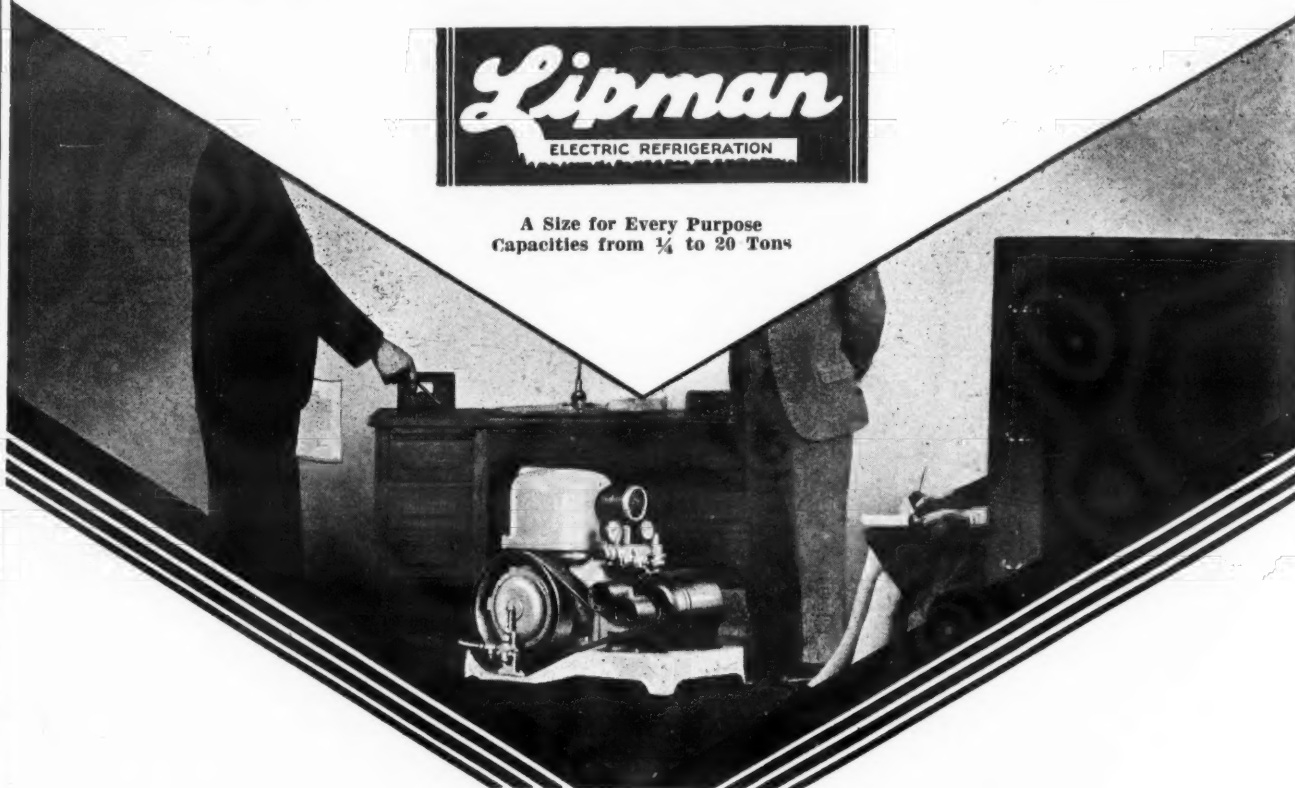
**REGULAR LIST PRICE \$20.80**

Reproductions Company, Department R-1,  
311-315 Center Street,  
Jamaica Plain, Mass.  
Please send me collect the food reproductions listed at \$16.80 above, which you guarantee to be exactly as represented, or send me information on the refrigerator assortments. Check one.

Name \_\_\_\_\_ Street \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_

**Lipman**  
ELECTRIC REFRIGERATION

A Size for Every Purpose  
Capacities from 1/4 to 20 Tons



## DOES LOWEST PRICE mean LOWEST COST?

Just what is your yardstick of value—purchase price, or cost of ownership?

There is not much question about which is the more important after installation—for then cost of ownership becomes far more vital than purchase price.

Why, then, at the time of purchase, should you judge value by what you read on the price tag? Why jump to the conclusion that a low-priced machine will mean low cost re-

frigeration? A poor machine will cost you more at any price.

**WHAT IS COST OF OWNERSHIP?**  
Depreciation plus service expense plus operating expense.

Buy results, not a price tag. Install a Lipman and watch low cost refrigeration quickly save any difference there may have been in the purchase price. And then

watch the savings in cost of ownership continue for years and years to come. The advice of a Lipman engineer on your refrigeration needs is free for the asking. Send coupon below.

GENERAL REFRIGERATION COMPANY, Beloit, Wis. ☐ Send Booklet C-5 ☐ Send Engineer's Name

Name \_\_\_\_\_

Firm Name \_\_\_\_\_

Address \_\_\_\_\_

City and State \_\_\_\_\_



## A MODEL FOR EVERY APPLICATION IN THE 1929 COPELAND LINE

### Domestic Line Includes Many New Refinements

A BROADENED line, covering domestic, commercial and apartment house multiple unit installations, marks Copeland's contribution to the field of electric refrigeration for 1929. Copeland's domestic line for 1929 is featured by the de luxe type ranging in price from \$310 to \$720 at the factory with food storage capacity from 6.5 cubic feet to 20.5 cubic feet and in freezing capacity from 108 cubes, 6.95 pounds, to 378 cubes, or 24.5 pounds of ice. The De Luxe this year uses a Seeger all-porcelain cabinet finished in white with the tops in color and interchangeable, a feature which was inaugurated by Copeland last year. Another feature of this line is the embossed porcelain door and base panels.

The hardware on this line is of satin finish with a deeply etched design and emphasizes the trend toward ornamentation which is taking place in the fine cabinet field. An electric light is provided in the de luxe line to illuminate the interior, with a pilot light behind a ruby prism on the outside to warn the housewife should she accidentally leave the light on after closing the doors.

The old Copeland CS line is replaced by a new line known as the new model CS, ranging in price from \$245 to \$380. These are full porcelain, with body in grey and tops and louver fronts. The hardware is the same as that used on the De Luxe. They are manufactured in three sizes of 5, 7 and 9 cubic feet storage capacity and with ice freezing capacities ranging from 108 cubes or 6.95 pounds at one freezing up to 162 cubes or 10.6 pounds.

Copeland's N line is continued this year with the addition of a new model known as the N-5 Special. It has a lacquer on steel exterior with full porcelain interior and lists at \$210. The N line includes four models, ranging from 5 cubic feet food storage capacity and 108 cubes, or 6.95 pounds of ice at one freezing up to 7 1/2 cubic feet food storage capacity and 162 cubes or 10.8 pounds of ice. The price range in this line is from \$195 to \$290 at the factory.

In the multiple installation line for apartment house use, Copeland has just brought out what is known as the ML line of cabinets, offering eight choices in this field, with prices ranging from \$43 to \$62 for the cabinet. Four cabinets are metal lined and include models with or without legs. In four models a machine compartment is provided in the base for use as an individual unit if wished. Four models are porcelain lined with capacities ranging from 4.2 up to 5 cubic feet capacity. All of these cabinets take the standard Copeland 3-M coil, which has two trays and will freeze 56 small or 30 large ice cubes.

Copeland's list for 1929 includes 10 separate sizes of cooling units for installation in the present ice boxes in capacities ranging from 126 ice cubes or 8.2 pounds of ice, up to 432 ice cubes, or 27.8 pounds. These units, using a model O condensing unit, are so made that they will service practically any size of domestic refrigerator. The model O condensing unit is for remote installation. It is equipped with a belt guard and mounted on legs resting on rubber pads. It is a single-cylinder type, using a 1-6 horsepower motor.

In the commercial field this year Copeland presents six air-cooled condensing units of wide capacity range, and three water cooled units for various capacities and conditions. Among these are the W, the X and the XA models. The model W is water-cooled and has a capacity of 825 pounds refrigeration per 24 hours. It has a two-cylinder compressor and is operated by a 3/4 horsepower motor. The model X is water-cooled, is operated by a two-cylinder compressor and is driven by a 1 horsepower motor. The XA is equal in capacity to the X, is an air-cooled unit and uses a two-cylinder compressor which is operated by a 1 1/2 horsepower motor.

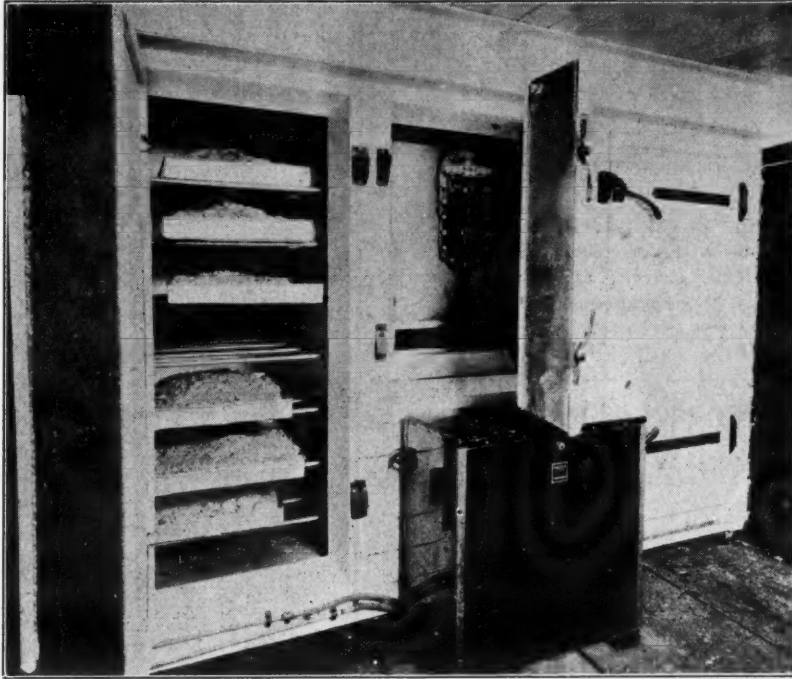
The commercial line also features the Copeland Zero Tube, made in sizes from 12 inches to 96 inches in length. These can be connected up as a single unit or used in series or parallel. Copeland rounds out its line with seven sizes of cooling coils with and without ice trays. Ice cream cabinets and soda fountain equipment in various sizes are also offered. All Copeland commercial units use methyl chloride.

Copeland goes into 1929 with a line of water coolers, which includes three models, two of which are adapted for use of water from bottled supplies or for connection directly with the city water mains. They range in capacity from 8 1/2 gallons up to 14 gallons per hour cooling capacity. Another unit, known as the model P, is adapted for bottled supply only. Its capacity is four gallons per hour.

For farm service, Copeland presents a milk cooling cabinet designed especially to cool milk quickly with constant temperatures automatically maintained.

(See page 15 for additional data on Copeland equipment)

## English Brewer's Yeast Preserved by American Cooling Equipment



Wine cooling electrically is more prevalent on the Continent than in the British Isles, but refrigeration is beginning to enter into the brewing of beverages and opens a new field for the selling of electrical equipment. Kelvinator Limited has just made an interesting Kelvinator-Nizer installation at the big Dare Brewery, Birmingham, England.

The purpose of refrigeration here is to maintain the yeast stock at a low temperature until ready for use so that the moulds do not start working prematurely. A variation in temperature or the breakdown of

the machine might result in the loss of an entire stock of yeast so that the job in this instance is a most particular one.

The production and stocking of yeast is also an added source of income to the English brewer as the bread of that nation is largely raised by this product and sales to bakeries are sizable.

The photograph from Birmingham shows a large built-in cabinet with cooling coil in the upper center and Nizer N. R. unit separately housed. The cabinet is fitted with special racks for accommodating the shallow yeast trays.

## ELECTROLUX ADVERTISING APPROPRIATION FOR 1929 TRIPLES AMOUNT OF 1928

Servel Sales, Inc., is tripling the 1928 appropriation for advertising Electrolux for the 1929 program. Full pages in leading magazines and newspaper campaigns are being supplemented by special copy in trade papers.

Copy directed to users is informative in nature. In newspapers such appeals as local operating costs, absence of moving parts and complete silence are being used. Many of the advertisements are using pictures of apartment houses equipped with gas refrigeration.

Opening gun of the New York campaign was fired the last week in February with large display advertisements appearing in several leading dailies in New York and Brooklyn. Copy for The New Yorker is scheduled for the near future. In a majority of the leading cities, including New York, the newspaper campaign will run throughout the year, the advertisements appearing at frequent intervals.

Several new pieces of Electrolux literature have been prepared for 1929. The new literature includes an unusual folder designed specially for architects' use. This booklet, which is an architect's file folder, carries a code number given by the American Institute of Architects. It contains complete, detailed information about each Electrolux model.

## M'CORD SHOWS EARNINGS OF \$746,497 DURING 1928

Report of McCord Radiator & Manufacturing Company and subsidiaries for year ended December 31, 1928, shows net income of \$746,497 after interest, depreciation, federal taxes, etc., comparing with \$705,496 in 1927. Stock outstanding consists of 32,225 no par shares of class A and 150,000 no par shares of class B stock.

## A. R. STEVENSON, JR., ADDRESSES FRANKLIN INSTITUTE MEETING

A. R. Stevenson, Jr., of the General Electric Co., addressed the regular meeting of the Franklin Institute, held in Philadelphia, Feb. 20.

Mr. Stevenson traced the history of refrigeration through ancient and medieval history and described domestic refrigerating machines now on the market. He also discussed absorption and compression types of ice plants giving approximate cost of operation of each type. He prophesied that house cooling would be popular within the next ten years.

## Wheeling Firm to Sell Electric Refrigerators

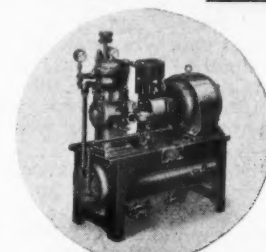
The firm of W. N. Hogan, Inc., Wheeling, W. Va., has been formed to distribute electric refrigerators. Officers of the new concern are: James Hogan, Pittsburgh; W. N. Hogan, W. H. Brandfass and M. A. Hogan, of Wheeling, and G. E. Connors, of Glendale.



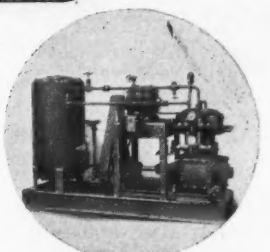
## For Those Bigger Commercial Jobs Use FRICK Refrigerating Machines

Make sure of meeting the capacity requirements of markets, dairies, hotels, hospitals, apartments, etc., by installing Frick Machines. Used for years by Armour, Kroger Grocery, Carnation Milk, Fleischmann, DuPont, U. S. Veteran Bureau, and thousands of others. Get full details about the Frick Line now. Write

**Frick Company**  
WAYNESBORO, PA. U.S.A.  
"MACHINERY SUPERIOR SINCE 1892"



Frick No. 1 1/2 Unit



Frick Combined Machine

# MCCRAY SAYS:



"Monel Metal trim....easy to keep spotless ....and shining"

MANUFACTURERS have discovered that Monel Metal trim is a valuable talking point when selling refrigerators.

If you mention Monel Metal trim to the prospective buyer—if you point out how it contributes to permanent attractiveness, durability, and cleanability, buyers listen with interest.

Refrigerator buyers are being regularly told about the advantages of Monel Metal through continuous color advertising in The Saturday Evening Post and Good Housekeeping.

Manufacturers, dealers and salesmen by mentioning Monel Metal can "cash in" on this national advertising.

SEND FOR DETAILS OF 1929 CUSTOMER COOPERATION

Monel Metal is a technically controlled Nickel-Copper alloy of high Nickel content. It is mined, smelted, refined, rolled and marketed solely by The International Nickel Company, Inc. The name "Monel Metal" is a registered trade mark.

# MONEL METAL

THE INTERNATIONAL NICKEL COMPANY, INC.



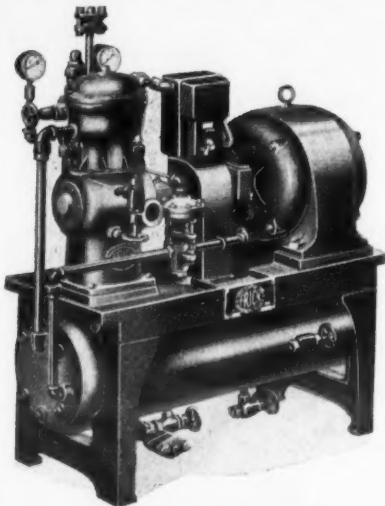
67 WALL STREET, NEW YORK, N. Y.



## FRICK CO. OFFERS A COMPLETE LINE OF COMMERCIAL UNITS

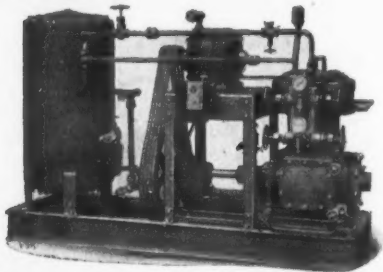
Carbon-Dioxide, Methyl Chloride and Ammonia Models Available

FRICK COMPANY, of Waynesboro, Pa., builds a line of commercial refrigerating equipment for ammonia and methyl chloride. Carbon-dioxide equipment is also standard for uses that are especially suited to this system.



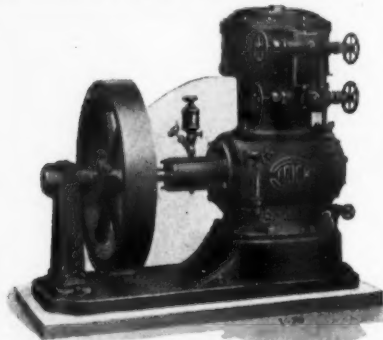
Frick Direct-Drive Unit

Their smallest machine is a direct-drive unit operated by a 1-hp. motor. This has a two-cylinder compressor, water-jacketed; shell-and-tube condenser (cleanable); and automatic starting, stopping and water control.



Frick Combined Machine with V-Belt Drive

For medium capacities they offer three sizes of belt-driven units, with compressors of the enclosed type; these are mounted on a steel base, with vertical shell-and-tube condenser at the opposite end. The 1929 machines employ V-belt drive. These machines use 3, 5 and 7½-hp. motors, respectively.



Frick Enclosed-Type Compressor

Frick larger compressors, for ammonia, are the two-cylinder belted type, with separate condenser and high side, in sizes from 5-in. by 5-in. up. The drive can be adapted to belt or direct-connected motor, steam or gas engine. These compressors have special features, including plate discharge valves, automatic lubrication, full safety devices, renewable die-cast bearings and extra-length stuffing box.

The Frick carbon-dioxide machines range in size from 2½-in. by 3-in. to 5¼-in. by 7-in., all with two cylinders. They are fitted with long pistons and forked connecting rods—a new method; force-feed lubrication, oil sealed metallic packing, and other features which give them all the advantages of enclosed type construction.

## PITTSBURGH COPELAND DISTRICT PLEDGES 50 PCT. SALES INCREASE IN 1929

W. D. McElhinny, vice-president in charge of sales of the Copeland Products, Inc., Detroit, addressed more than 200 Copeland salesmen from the Western Pennsylvania district at a recent sales convention conducted under the direction of the McKean Co., Pittsburgh, Copeland distributors. D. B. Henry, of the commercial engineering department, Detroit, spoke on the Copeland commercial line. Edgar McKean, president of the McKean Co., assured Mr. McElhinny that the Pittsburgh district would more than beat what W. R. Wilson, chairman of the board, had set as a maximum goal, a 50 per cent increase over last year.

## Copeland Distributor Presents New Models at Builders' Show



Ten models of Copeland electric refrigerators and a condensing unit were shown by the R. B. Alling Company, Copeland distributors for Michigan, at the recent Builders' Show in Convention, Hall, Detroit, February 20 to March 3. The cabinets, ranging from the small N-5 up to the largest of the de luxe types, as well as the Copeland-Seeger line, were shown grouped in a semi circle, with the condensing unit in front.

## WASHINGTON D. C. SURVEY SHOWS 16, 157 ELECTRIC UNITS TO 62,000 HOMES

A recent survey made in Washington, D. C., showed there were 16,157 electric refrigerators in the 62,000 individual residences connected to the lines of the Potomac Electric Power Co.

The information was secured from dealers and jobbers in the various makes of refrigerators. Approximately 15,000 of the 16,157 units reported were the product of three manufacturers, but nine different makes are represented in the total.

Figuring the annual consumption of a refrigerator at 670 kwh., the annual consumption for refrigerators would be 12,755,690.

About a thousand of the number of refrigerators are installed in apartments, the rest are in residences.

## ICELECT OFFERS FOUR COMPRESSOR MODELS & NEW EVAPORATOR

ICELECT Corp., Omaha, Nebr., manufacturer of Icelect electric refrigeration systems, announces its 1929 line carrying four models of compressor units. These models are equipped with motors ranging in size from 1-6 to ½ h. p. and have ice melting capacities ranging from 220 to 570 lbs. per day.

These four compressors are of the two cylinder, horizontal, opposed, reciprocating, single acting type and use the V belt drive. Both discharge and suction valves are of the poppet or mushroom type made from Monel metal. All four compressors have condensers of the radiator fin type.

Recently, the Icelect company put a new type of evaporator on the market, for commercial installations. This evaporator is made of two corrugated cylinders, one inside the other. The space between the two cylinders contains about a pint of refrigerant.

Melchoir, Armstrong & Dessau, New York City, have been appointed foreign representatives of the Icelect Corp.

## PIERSON-LARKIN OFFER MANY SIZES AND TYPES OF REFRIGERATING COILS

The Pierson-Larkin Refrigerating Corp., Atlanta, Ga., manufacturers of Larkin aluminum-plate coils, announces that additions have been made to its line, which now include close to 50 different size and type coils for use in market coolers, display cases, freezer cases and refrigerators. Officials of the company report that since the initial announcement of their coils in ELECTRIC REFRIGERATION NEWS they have received in excess of 300 inquiries from every section of the United States as well as from many foreign countries.

The aluminum plate-coils offered by the Pierson-Larkin company have aided in reducing the operating costs of equipment employing the low-side unit, and they report that these coils have solved the defrosting and dehydrating problems of commercial refrigeration. The plant of the company is now in full production in all sizes and types of coils.

## James Spear Stove and Heating Co. to Represent Copeland in Philadelphia

The James Spear Stove and Heating Co., 1823 Market St., Philadelphia, Pa., have been appointed exclusive sales representatives for Copeland commercial equipment in the Philadelphia district.

## Philadelphia Firm To Sell Copeland Commercial Equipment

The James Spear Stove & Heating Co., 1823 Market St., Philadelphia, has been appointed exclusive sales representatives for Copeland commercial equipment in the Philadelphia district.

## SERVEL ISSUES SALES MANUAL ON ELECTROLUX

"How to Sell Electrolux, the Gas Refrigerator," is the title of a sales manual issued by Servel Sales, Inc., Evansville, Ind., for Electrolux salesmen. The market for the gas refrigerator is discussed in the opening chapter and this is followed by one that treats of the organization which is behind the product. The next two chapters take up food spoilage and the development of refrigeration, including the absorption system.

A discussion and description of the Electrolux unit is contained in the next few sections, which also cover the construction features of the unit. Selling hints contained in the chapters that follow are: Selling Electrolux refrigerators, suggestions on how to locate prospects, lead chasing, getting prospect's interest, sales appeals, demonstration and closing the sale. Twenty-six questions and answers pertaining to the Electrolux refrigerator are included in the manual.

## A LONG LIFE —

YOUR study of Savage Mercury Compressors will develop, among others, these mighty interesting and important facts:

- There is no age limit to Savage compressors.
- The loss in operating efficiency is negligible; the Savage retains its refrigerant indefinitely.
- The depreciation is less—much less—than that of conventional piston type compressors.

You do not have to seek far for the reasons:

There is no lubricating problem in Savage Mercury Compressors, because the Savage requires, and has no lubricant within the system in contact with the refrigerant. The Savage Mercury System is hermetically sealed. Stuffing box, shaft seal, gasket joints are conspicuous by their absence. There can be no valve or piston leakage because there are no valves or pistons in Savage Compressors. There is no loss in operating

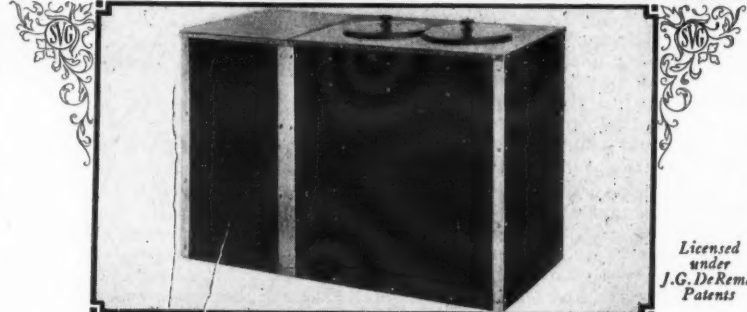
efficiency due to internal wear because there are no internal parts.

Adequate and sealed cork insulation, Savage flat plate evaporators, and the exclusive Savage jelly freezing mixture in place of the customary liquid brine still further prolong life, lower depreciation, and reduce calls by the "service doctor."

This is but part of the Savage story. Ask us for all the facts. Invite co-operation of Savage engineers. No obligation.

Distributed by  
SAVAGE PRODUCTS DISTRIBUTING CORPORATION,  
UTICA, N. Y.

COMPARE YOUR SERVICE COSTS WITH THOSE OF SAVAGE USERS



ONE OF THE PRODUCTS OF  
SAVAGE ARMS CORPORATION UTICA NEW YORK

.....Your unit is judged by the appearance of its cabinet .....

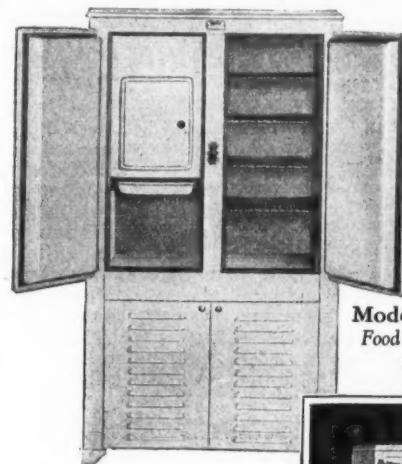
WOMEN judge by appearance! Make no mistake about it, your unit is judged every day by the appearance of its Cabinet. Particularly is this true now, when a great vogue for beautiful and efficient kitchens is claiming the attention of every housewife. . . . When well planned and well kept kitchens are as much a part of the trend of the times as the interior decorations of other parts of the home.

## What kind of an impression

do your complete assemblies make upon the Housewife? Does the exterior finish, design and interior arrangement say to her, "Here is a refrigerator exactly planned for you . . . with the kind of beauty and service you want."

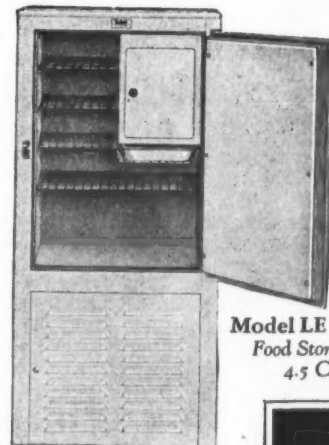
## Play safe...

Adopt REX Cabinets and know that your entire refrigerator measures up to the standards of beauty and utility as demanded by the modern American housewife.



Model LP 7 and P 7  
Food Storage Capacity  
7 Cubic Feet

A typical Rex Cabinet for residences. In the complete line there are 10 standard models ranging in size from 5.5 cubic feet to 15 cubic feet food storage capacity.



Model LE 45 and LP 45  
Food Storage Capacity  
4.5 Cubic Feet

10 standard apartment home cabinets for multiple hook-up, remote and self-contained installations. Sizes range from 4 cubic feet to 5 cubic feet food storage capacity.



# REX CABINETS

REX MANUFACTURING CO., CONNERSVILLE, IND., U.S.A.



# KELVINATOR

## SALES INCREASE

### 110%

*In February Over Previous Month*

#### Flood of Orders Follows Announcement of New Silent Cabinet Kelvinator

Embracing a wide range of self-contained and remote installations, the Kelvinator line

Graphically reflecting the opinion of Kelvinator distributors and dealers on the New Silent Kelvinator recently announced at a series of 21 regional sales conventions, are Kelvinator sales figures for the first 5 months of the fiscal year, beginning October 1, 1928.

In that period, Kelvinator orders show a gain of 34 per cent over the same months of the previous year. February 1929 orders increased 110 per cent over January and were 59 per cent larger than February 1928.

##### *Amazing New Silence*

Kelvinator dealers are a unit in proclaiming the New Silent Kelvinator, the greatest engineering achievement in the history of electric refrigeration.

Amazingly silent and even more efficient and more economical than

ever, the new 1929 Cabinet Kelvinators are the culmination of Kelvinator's fifteen years of quality leadership in the refrigeration industry.

##### *New Convenience in Freezing Ice Cubes*

Kelvinator domestic electric refrigerators are first to offer in 1929, the new flexible rubber tray for freezing ice cubes. By simply bending the tray, users may extract one or a dozen ice cubes in a flash, without melting or loss of ice.

Fully automatic, as always, the Kelvinator needs no regulation, operating with positive thermostatic control. And the time-tested and proven Cold-Keeper, acts as a constant reservoir of cold—a wonderful economy factor in the year round satisfactory service of Kelvinator in the home.

offers the most complete assortment of household models under any single name on the market.

In addition, the Kelvinator dealer has access to the great commercial field, with the most efficient and economical equipment for every possible purpose.

##### *Kelvinator—the Pioneer of Electric Refrigeration*

Backed by the prestige of the oldest and greatest name in electric refrigeration and the most advanced type of refrigerating units on the market, the Kelvinator franchise today offers a selling opportunity for 1929 that you cannot overlook.

Wire or write today for complete information on Kelvinator Sales Plans for 1929 and literature describing the new line of Silent Kelvinators.

**KELVINATOR CORPORATION**  
DETROIT, MICHIGAN



## Modern Equipment Solves Cooling Problems in Delicatessen



The four refrigerated display cases shown in the above photograph were installed in the Milwaukee Delicatessen in Lincoln, Nebr., by the Omaha Fixture & Supply Co. of Omaha, Nebr.

## SERVEL-ELECTROLUX ANNOUNCE MANY NEW FEATURES IN '29 LINE

Gas and Electric Models Give Full Market Coverage

SERVEL SALES, Inc., Evansville, Ind., presents for 1929 a line of new and improved equipment to fit all practical applications of both electric and gas refrigeration. Four new models are offered in the Servel domestic line for electric operation, seven are available in Electrolux gas operating cabinets, and in addition nine Servel electric compressors for commercial requirements are being manufactured.

Besides these three types, Servel also offers new chilling units for commercial operation, three water coolers, and nine sizes of ice cream cabinets.

### New K Line Featured

In the K series, three separate models are now available, known as K-5, K-7 and K-10. Cabinets are being offered in both a standard white and a two-tone ivory grey with white doors. The cabinet frames are of sturdy hardwood and the liner is fused porcelain. For insulation, extra thick corkboard dipped in hydrolene is used. Chrome plated hardware is standard equipment.

An increased ice cube supply is one of the improvements in the new Servel K line. The K-5 provides an ice capacity of over 5 lbs., with 48 cubes; the K-7 offers 14½ lbs., with 120 cubes, and the K-10 holds 20½ lbs., with 168 cubes. Shelf space ranges from 7¼ sq. ft. to 14 sq. ft. in the three models.

In addition to the K series, model D-5 has been developed to replace the H-5 in the 1928 line. It has a five cubic foot food capacity with 7½ sq. ft. shelf space. There are four ice trays with a capacity of 5 lbs. of ice, or 48 cubes. This model has been especially designed to meet the needs of the small family or apartment house.

### New Commercial Units

With a range of nine separate machines, Servel commercial refrigeration is prepared to offer ice melting capacities up to one-half ton. Improvements have been effected, such as the adoption of the low side float, a new oil return, and a radiator type condenser. All connections, except one, are under low pressure, reducing the leakage factor.

### Chilling Units Improved

One of the features of the new Servel chilling units is the increased supply of ice cubes in the 7 cu. ft. model and the 10 cu. ft. size. Chilling units are available in the new designs not only for installation in Servel cabinets but for multiple installation in cabinets of other makes. Ten inexpensive sections are being manufactured, offering an arrangement of 68 different chilling units. One or more of these units can be worked up together, according to requirements.

### Eight Electrolux Models

For the gas refrigeration field, seven Electrolux refrigerators are announced for 1929. These contain many refinements in the operating unit itself, with additional beauty obtained by the adoption of long strap hinges which are chrome plated. Several improvements have been made in the cabinet design, while the ice capacity has increased.

The new models run in series as follows: EL-3 (New Yorker), EL-4 (Kitchenette), EL-5 (Double Duty), EL-5B (Hostess), EL-7 (Chef), EL-10 (Mansion), EL-10A (Mansion) and the stove combination.

The ice capacity of the various Electrolux models ranges from 36 to 80 cubes. Cubic feet measurements run from three to ten, respectively, while shelf space in most models has been materially increased.

Although white has been adopted as the standard color, two other optional colors will be provided on two weeks' notice at the factory. These colors are the veiled green and veiled grey, which were introduced by Servel in 1928.

## FOREIGN SHIPMENTS OF ELECTRIC REFRIGERATORS

January Exports Reported by Bureau of Foreign and Domestic Commerce

Country of Destination	Units Up To ½ Ton Capacity		Units Over ½ To 1 Ton Capacity	
	No.	Value	No.	Value
Austria	—	—	20	4,534
Belgium	11	2,103	26	7,400
Czechoslovakia	—	—	45	31,374
Denmark	5	1,213	—	—
Finland	—	—	20	4,135
France	43	9,067	195	38,529
Germany	5	839	—	—
Greece	2	209	—	—
Italy	14	2,730	—	—
Netherlands	28	3,751	18	3,967
Norway	—	—	20	4,550
Poland and Danzig	1	150	—	—
Portugal	3	922	—	—
Spain	10	1,563	3	2,550
Sweden	—	—	27	6,335
United Kingdom	54	8,140	1	285
Canada	187	19,593	331	67,493
Costa Rica	2	758	5	1,045
Guatemala	15	3,151	—	—
Honduras	6	1,828	2	833
Panama	14	3,183	—	—
Salvador	—	—	3	1,128
Mexico	30	3,850	7	2,865
Newfoundland and Labrador	1	176	—	—
Bermudas	8	1,824	6	1,323
Barbados	5	1,522	—	—
Jamaica	1	502	—	—
Other British West Indies	2	410	—	—
Cuba	2	867	26	5,619
Dominican Republic	3	1,301	3	1,906
Netherland West Indies	2	1,118	—	—
Haiti, Republic of	1	154	—	—
Virgin Islands of U. S.	3	400	—	—
Argentina	148	21,215	10	5,098
Bolivia	—	—	1	369
Brazil	282	59,433	64	13,438
Chile	32	4,111	14	2,449
Colombia	105	19,137	11	1,854
Ecuador	6	1,400	—	—
Peru	21	4,991	—	—
Uruguay	—	—	22	2,579
Venezuela	28	3,977	13	2,165
Aden	7	1,192	—	—
British India	166	28,794	—	—
British Malaya	2	367	1	252
Ceylon	3	715	1	180
Java and Madura	17	3,486	—	—
Hong Kong	—	—	15	2,159
Japan	22	3,487	345	65,680
Philippine Islands	41	8,143	8	757
Syria	—	—	4	536
Turkey	—	—	13	3,255
Australia	232	47,782	110	22,551
New Zealand	72	15,044	1	275
British East Africa	12	1,849	—	—
Union of South Africa	—	—	—	—
Africa	75	14,813	—	—
Egypt	28	6,138	8	1,638
Total	1,757	\$317,398	1,399	\$293,106

## FRANK LOUGHRAN, JR., IS APPOINTED SALES MANAGER OF ALEXANDER-SEEWALD CO.

Frank Loughran, Jr., has been appointed sales manager of the electric refrigeration department of the Alexander-Seewald Co., 380 Peachtree St., N. E., Atlanta, Ga. E. V. Dunbar has been made sales promotion manager. The Alexander-Seewald Co. are distributors for General Electric refrigerators.

## Electro-Kold Sales Co. Makes Installations in Oregon Jails

Electro-Kold Sales Co., Portland, Ore., has been awarded contract by Commissioners of Multnomah County to make the refrigeration installation in the county jail and sub-jail at Kelly Butte. This improvement is expected to reduce the county culinary expenses and better the health of the inmates was given as the reason for the installation.

## K. G. Baker Joins Cincinnati Sales Force of Wagner Electric Corp.

The Wagner Electric Corp., of St. Louis, Mo., announces the addition of K. G. Baker to its Cincinnati sales force. Mr. Baker is a graduate of Purdue University, and has previously been connected with the Century Electric Co. and the Fulton Iron Works, both of St. Louis.

## NEW DISPLAY CASE PUT ON MARKET BY OMAHA FIXTURE & SUPPLY CO.

The Omaha Fixture & Supply Co., Omaha, Nebr., has recently placed a new model refrigerator display case on the market. It is designed especially for electric refrigeration.

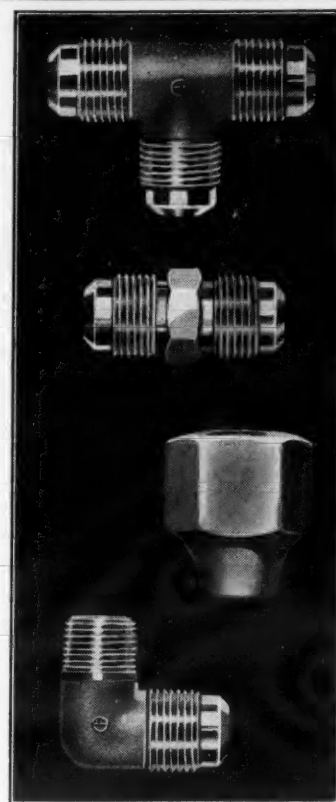
The case is 42" high, 34" wide at the bottom, and 25" wide at the top. It carries three thicknesses of plate glass in front. The top display shelf is 24" wide and the bottom shelf 25" wide.

The production of the case will necessitate the enlarging of factory facilities, according to Harry Lapidus, president of the company. C. M. Betts reports orders already in that warrant an estimate of more than a half million dollars business this year.

## TAGLIABUE CO. ANNOUNCES NEW SNAP-ON CONTROLLER

The C. J. Tagliabue Mfg. Co., Brooklyn, N. Y., manufacturers of instruments for indicating, recording and controlling, announces a new style snap-on controller, SO-500, for the regulation of either temperature or pressure. The differential setting in this new control can be lessened or increased through the operation of a small lever arrangement on the main lever arm on the controller.

The temperature setting of the instrument is regulated through the operation of a knurled nut. When this nut is turned to the right the differential setting of the instrument is carried down over the range, that is the temperature is lowered. The temperature is raised by turning the nut to the left. A conduit box is supplied with each controller which has four knock-out locations for electrical connections.



All combinations of tube and pipe thread ends can be furnished. All standard sizes and many specials in stock for immediate shipment.

## Seep-Proof Tube Fittings

Designed Expressly for the Refrigeration Industry

The Commonwealth line of refrigeration tube and pipe fittings is designed and produced to meet the unusual demands imposed by refrigeration service. The exclusive use of brass forgings and brass rod insures compact grain structure and great tensile strength. These, together with more than usual accuracy and care in machining the seats and threads, provide a quality of fitting that will insure a tight, seep-proof joint for the life of the installation.

If you are interested in the manufacture or installation of automatic refrigerator equipment, ask for catalog R-30, or send complete specifications on "specials."

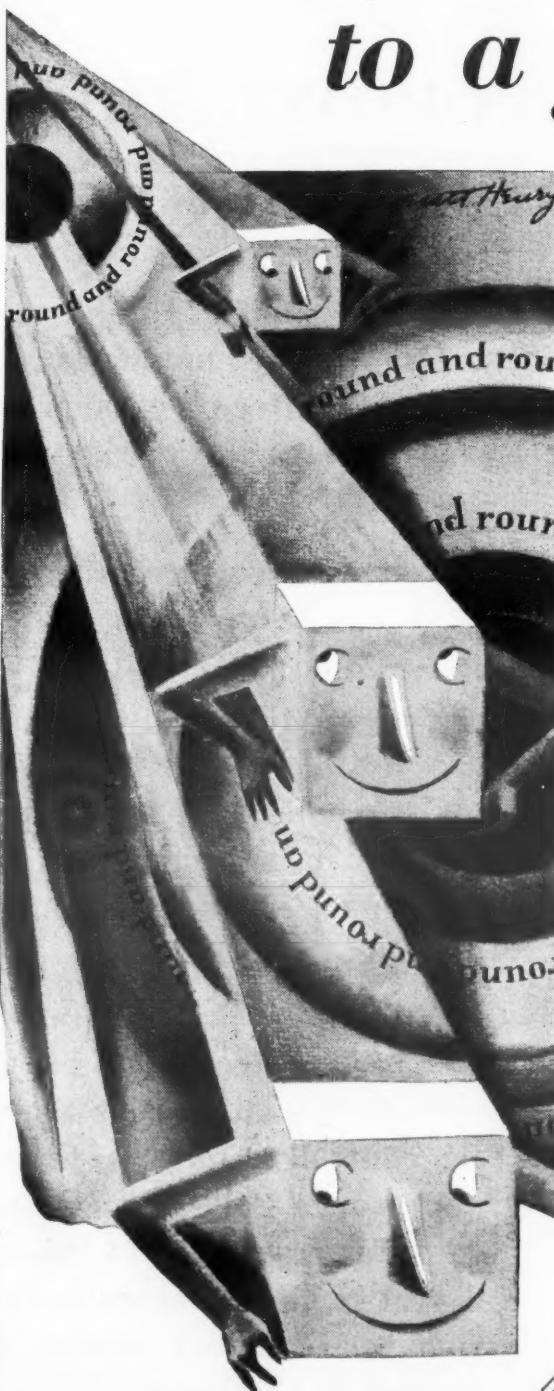
COMMONWEALTH BRASS CORPORATION

5781 Commonwealth Avenue Detroit

# COMMONWEALTH BRASS FITTINGS

# OFF

## to a flying start!



ON February 16th more than three million families became aware that the country's fastest growing industry had achieved another notable triumph.

On this day the Holmes Electric Refrigerator—heralded by a preliminary advertising campaign that had attracted nation-wide attention—was announced to the public.

Since this announcement was made, every day that has passed has proven more conclusively than ever that the Holmes contains every element of leadership. Given unprecedented simplicity and mechanical perfection, plus important benefits new to electric refrigeration, this most modern, most advanced electric refrigerator is on its way to a fine and notable success,—a success which will be shared by the distributors and dealers who handle it.

HOLMES PRODUCTS, INC.

205 East 42nd Street

New York City

# HOLMES ELECTRIC REFRIGERATOR

© H. P., Inc., 1929



# NO SERVICE on the Gas Refrigerator

**FULL PROFIT.** . . every time you sell an Electrolux. Full profit on every sale . . . years after. For the gas refrigerator has licked the service problem.

No more dissatisfied customers . . . stopping payments . . . giving your reputation a black eye . . . ruining good will . . . because some bothersome little gadget gets out of kilter constantly. No more hurry calls for the service man, and all the nuisance and bother that means. And what a selling argument! . . . "Madam, this refrigerator needs no service."

## Why Electrolux cuts out service

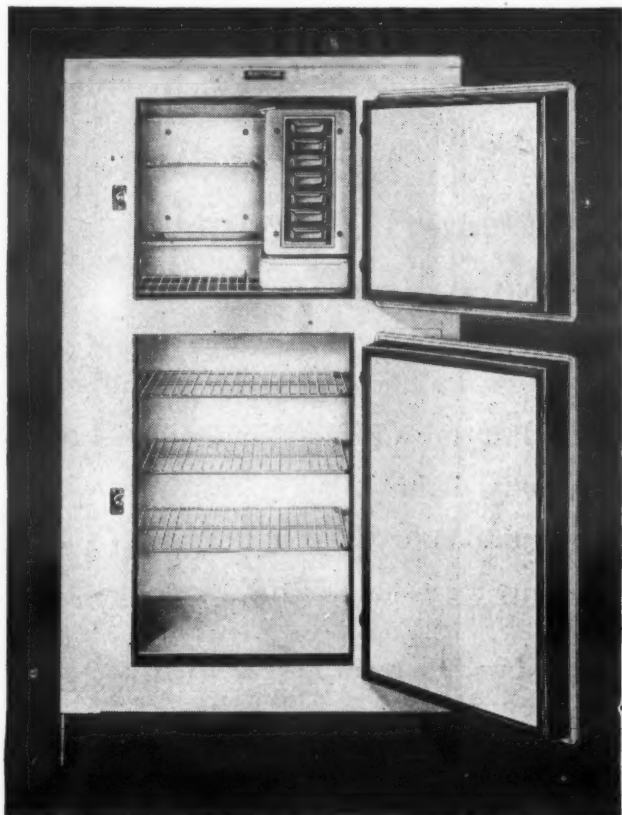
Electrolux is not a mechanical refrigerator. It is automatic, of course. But it operates by physical action . . . the heat of one tiny gas flame. The cold-making unit is in one solidly welded piece . . . hermetically sealed at the factory. It's all *inside* the refrigerator . . . out of sight . . . out of mind.

There's no machinery . . . not one moving part. Thus there is nothing to get out of order, need repairs or wear out. Electrolux doesn't even have to be oiled. It has, of course, the automatic controls that permit its regulation to individual conditions. Such simple regulation and occasional cleaning of the gas burner are the only things about it that even remotely resemble customary refrigerator service.

## 3 powerful sales points

Add to this, that Electrolux is absolutely noiseless . . . its first cost to your prospective customer is no greater . . . its operating cost, due to the low price of gas and small consumption, is far less . . . and you see why progressive refrigeration dealers who want sure profits are so anxious to secure the Electrolux franchise.

**Beautiful Lifetime Cabinets** distinguish all Electrolux models. One shown here is Chateau. In addition to lustrous white, this and all other models may also be had in Crystal Green or Silver Grey. Selling prices of 8 Electrolux models range from \$210 to \$510 F. O. B., Evansville, Indiana.



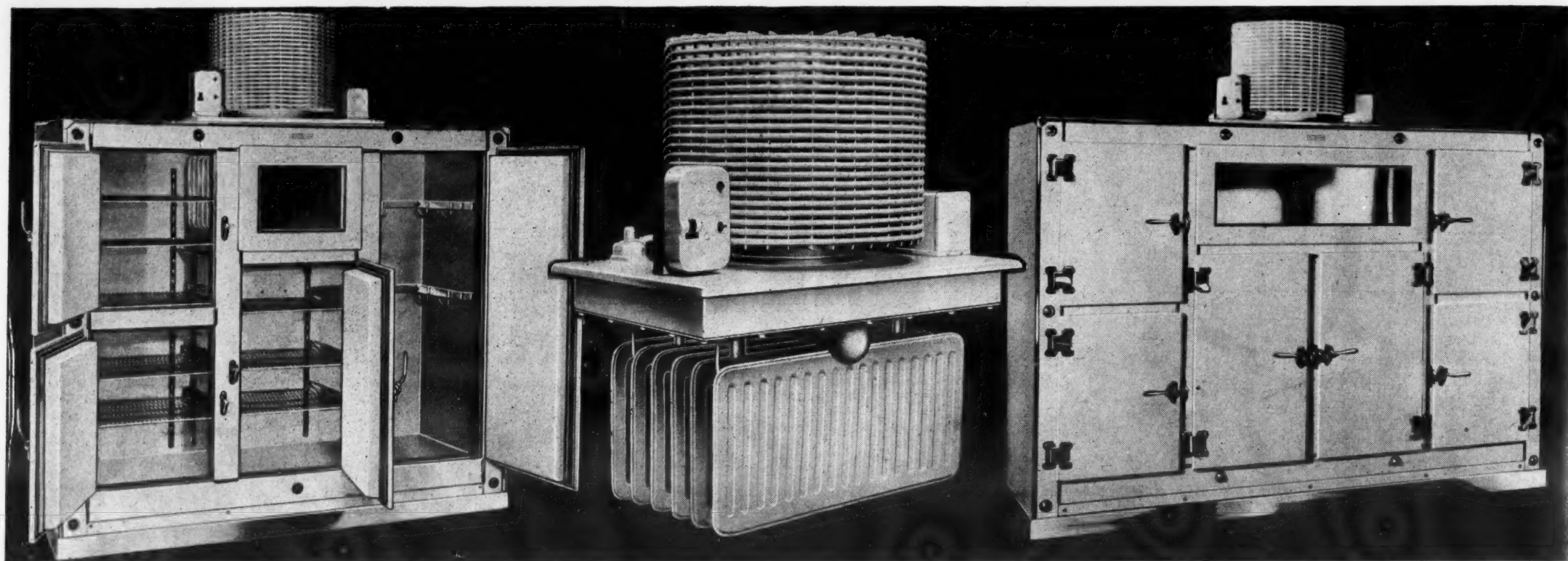
## WHERE FRANCHISE IS OPEN

In certain territories, Electrolux dealer franchises are open at present. If you are interested in taking on this full-profit, no-service line, write or wire today to Servel Sales, Evansville, Indiana.

**ELECTROLUX THE GAS REFRIGERATOR**  
MADE BY **SERVEL**



# General Electric's New Line of Commercial Units



## Specifications of Model C-600—A Refrigerator for General Commercial Application—All-Porcelain Interior, White Lacquer Exterior

Net Food Storage Capacity—60 cu. ft.  
Food Shelf Area—75 square feet.  
Exterior Dimensions—Body, 103½-in. wide, 30-in. deep, 72-in. high. Overall, doors and hardware, 104½-in. wide, 33½-in. deep, 72-in. high.  
Interior Dimensions—94½-in. x 21½-in. x 57½-in.  
Unit Over Cabinet—20½-in.  
Total Height—Unit and cabinet, 92½-in.  
Interior Finish—White porcelain on steel.  
Exterior Finish—White lacquer on steel.  
Trim—Monel metal, high mirror permanent polish.

Mirror—Inserted directly in front of chilling unit.

Hardware—Springless door fasteners; General Electric type hinges.

Shelves—Straight wire shelves, adjustable to 2-in. spacings.

Insulation—Approved General Electric specifications.

Door Openings—Small, 20x26-in.; Large, 20x36-in.

Unit (DR-5)—½ h. p., single phase condenser motor. All moving parts enclosed in hermetically sealed casing. 220 volts, A. C. and D. C., 1800 r. p. m. Forced lubrication to all bearing surfaces from permanent oil supply. Double oscillating cylinder direct connected to motor. Air-cooled condenser mounted on steel fins which are welded to compressor casing.

Self-Defrosting—The unit operates on a defrosting cycle and needs never be stopped for defrosting the chilling unit. This unit is not equipped for ice freezing.

Cabinet Construction—This cabinet is made in knock-down construction, making it possible to move through small openings where the assembled cabinet cannot be handled.

Weight—Unit, 460 lbs.; cabinet, 1425 lbs.

Shipping Weight—Unit, 550 lbs. (approx.) Cabinet, 1795 lbs.

## Specifications of General Electric Refrigerating Unit Model DR-5

Compressor—The compressor is of the twin oscillating cylinder type, directly connected to the motor. The stuffing box is eliminated by

having the motor mounted inside of the hermetically sealed housing.

Evaporator—White porcelain on steel. Operates on a defrosting cycle.

Lubrication—All moving parts are liberally supplied with oil by means of a simple forced feed system. Each unit has a permanent supply of 4½ quarts of special mineral oil. No re-oiling is necessary, since the hermetically sealed design eliminates the factors which ordinarily cause the deterioration of oil.

Mounting—The compressor unit is mounted on three vertical springs inside of the housing to insure quietness of operation and freedom from vibration.

Motor—A single phase, ½ h. p., 220 volt condenser motor is used. The condenser motor represents the latest development in high efficiency, high power factor, fractional horse-power motor design. The motor does not cause radio interference, since it has no brushes or sliding contacts. The power input to the motor, under normal conditions of operation, is approximately 475 watts. The power factor is above 85%.

Capacity—2100 B. T. U. per hour; 80 deg. room; 20 deg. chilling unit.

Weight—Cased, approximately 550 lbs.; Uncased, 460 lbs.

Used in Following Cabinets—Model C-450 and Model C-600.

Control—The automatic control maintains a uniform temperature in the cabinet. It has an overload relay which protects the motor against abnormal conditions. It also has a manual switch for starting and stopping the unit.

## Specifications of Model C-451—A Refrigerator for General Commercial Application—All-Porcelain Interior, White Lacquer Exterior

Net Food Storage Capacity—45 cu. ft.

Food Shelf Area—35 sq. ft.

Exterior Dimensions—Body, 79½-in. wide, 30-in. deep, 72-in. high. Overall, doors and hardware, 81½-in. wide, 33½-in. deep, 72-in. high.

Interior Dimensions—71-in. x 22½-in. x 57½-in.

Unit Over Cabinet—20½-in.

Total Height—Unit and cabinet, 92½-in.

Interior Finish—White porcelain on steel.

Exterior Finish—White lacquer on steel.

Trim—Monel metal, high mirror permanent polish.

Mirror—Inserted directly in front of chilling unit.

Hardware—Springless door fasteners; General Electric type hinges.

Shelves—Straight wire shelves, adjustable to 2-in. spacings.

Insulation—Approved General Electric specifications.

Door Openings—Small, 20x26-in.; Center, 20x36-in. Long end door, 20x55-in.

Unit (DR-5)—½ h. p., single phase condenser motor. All moving parts enclosed in hermetically sealed casing. 220 volts, A. C. and D. C., 1800 r. p. m. Forced lubrication to all bearing surfaces from permanent oil supply. Double oscillating cylinder direct connected to motor. Air-cooled condenser, mounted on steel fins which are welded to the compressor casing.

Self-Defrosting—The unit operates on a defrosting cycle and need never be stopped for

defrosting the chilling unit. This unit is not equipped for ice-freezing.

Cabinet Construction—This cabinet is made in knock-down construction, making it possible to move through small openings where the assembled cabinet cannot be handled.

Weight—Unit, 460 lbs. Cabinet, 1128 lbs.

Shipping Weight—Unit, 550 lbs. (approx.) Cabinet, 1343 lbs.

# Wanted! 46 partners

FOR the first time there is offered an opportunity to become a business partner with a highly successful oil burner manufacturer—a company which has made outstanding profits.

This offer is available only to Quiet May dealers and those who join our dealer organization within the very near future. Right now we want 46 more dealers—no misfits or failures—but wide-awake business men who can and will be successful. If you are of this type you will be invited to join

## The Quiet May Dealers' Investment and Profit-Sharing Trust

For the first time in the history of the business a manufacturer is taking his dealers into partnership on a profit-sharing plan. No dealer is called upon to risk any of his money and those who participate in this Investment and Profit-Sharing Trust will automatically place themselves in line for a share of the factory profits.

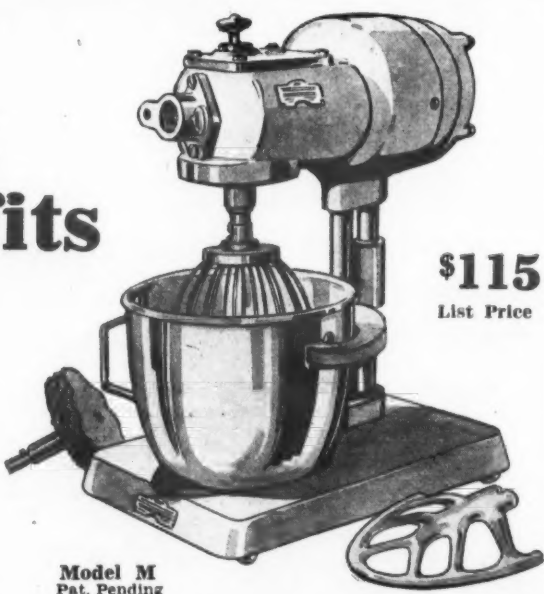
Inquiries invited from interested people regardless of their present business affiliations.

**MAY OIL BURNER CORPORATION**  
BALTIMORE, MARYLAND

## Here's Extra Profits

FOR

**Electrical  
Refrigerator  
Dealers**



Model M  
Pat. Pending

Every home in your town that has an electric refrigerator is a live prospect for a GEM Kitchen Mechanic. This marvellous little appliance is made to sell to just the kind of woman who appreciates electric refrigeration.

GEM is nationally advertised in Good Housekeeping and endorsed by the Good Housekeeping Insti-

tute. It beats, mixes, whips, freezes ice cream, extracts fruit juices, grinds meats and does dozens of other tasks that were formerly irksome and time consuming.

GEM will make two sales grow where only one grew before. Write for discounts, catalogues and dealer franchise. Excellent profits await you.

## Gem Kitchen Mechanic

GEM APPLIANCES, INC., 280 Madison Ave., New York City

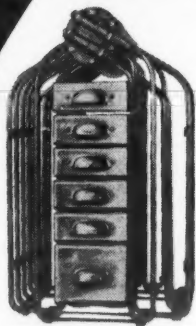


COMMERCIAL  
EVAPORATORS  
EXPANSION  
VALVES  
CONDENSERS  
EVAPORATOR  
HANGERS  
ICE TRAYS

# FEDDERS

## STANDARD APPLIANCES

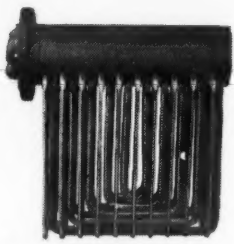
DOMESTIC  
EVAPORATORS  
SCALE TRAPS  
LIQUID FILTERS  
RECEIVERS  
SUCTION  
SCREENS



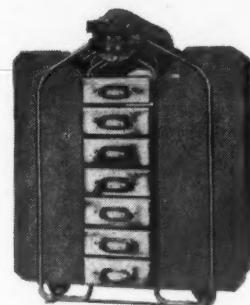
No. EC-35  
Evaporator  
Height 26 $\frac{1}{2}$ ", Width  
16 $\frac{1}{2}$ ", Depth 17 $\frac{1}{2}$ "  
Minimum Ice Cham-  
ber:  
Width 20", Depth 20",  
Height 32"



No. EC-3 Evaporator  
Height 18 $\frac{1}{2}$ ", Width 7 $\frac{1}{2}$ ", Depth  
17 $\frac{1}{2}$ "  
Minimum Ice Chamber:  
Width 6 $\frac{1}{2}$ ", Depth 17", Height 18"  
Front View Side View



No. EC-50 Evaporator  
Height 25 $\frac{1}{4}$ ", Width 24 $\frac{3}{4}$ ",  
Depth 19 $\frac{1}{4}$ "  
Minimum Ice Chamber:  
Width 28", Depth 21",  
Height 30"



No. EC-40 Evaporator  
Height 26 $\frac{3}{4}$ ", Width 22 $\frac{1}{4}$ ",  
Depth 17 $\frac{1}{4}$ "  
Minimum Ice Chamber:  
Width 25", Depth 20",  
Height 32"



No. EC-47  
Evaporator  
Height 30", Width  
16 $\frac{3}{4}$ ", Depth  
19 $\frac{1}{4}$ "  
Minimum Ice  
Chamber:  
Width 19", Depth  
21", Height 35"



No. EC-45 Evaporator  
Height 22 $\frac{1}{4}$ ", Width 20 $\frac{1}{4}$ ",  
Depth 15 $\frac{1}{4}$ "  
Minimum Ice Chamber:  
Width 23", Depth 17",  
Height 27"



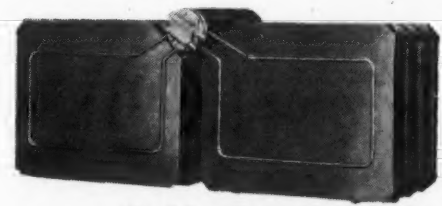
No. EC-44  
Evaporator  
Height 30", Width 7 $\frac{1}{2}$ ",  
Depth 17 $\frac{1}{4}$ "  
Minimum Ice Cham-  
ber:  
Width 9", Depth 21",  
Height 33"



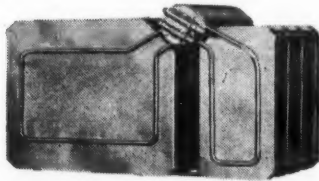
No. EC-43 Evaporator  
Height 22 $\frac{1}{4}$ ", Width  
15 $\frac{3}{4}$ ", Depth 15 $\frac{1}{4}$ "  
Minimum Ice Chamber:  
Width 18", Depth 17",  
Height 27"



No. EC-42 Evaporator  
Height 18 $\frac{1}{4}$ ", Width 15 $\frac{3}{4}$ ",  
Depth 15 $\frac{1}{4}$ "  
Minimum Ice Chamber:  
Width 18", Depth 17",  
Height 23"



No. EC-55 Evaporator  
Height 20 $\frac{1}{4}$ ", Width 48 $\frac{1}{4}$ ", Depth  
18 $\frac{1}{4}$ "  
Minimum Ice Chamber:  
Width 50", Depth 22", Height 26"



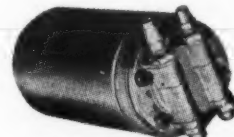
No. EC-53 Evaporator  
Height 20 $\frac{1}{4}$ ", Width 34 $\frac{3}{4}$ ", Depth  
18 $\frac{1}{4}$ "  
Minimum Ice Chamber:  
Width 38", Depth 22", Height 25"



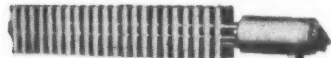
No. EC-51 Evaporator  
Height 8 $\frac{1}{4}$ ", Width 48", Depth 18 $\frac{1}{4}$ "  
Minimum Ice Chamber:  
Width 50", Depth 22", Height 13"



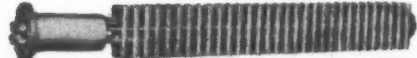
No. EC-41  
Evaporator  
Height 12", Width  
30 $\frac{1}{4}$ ", Depth 15 $\frac{1}{4}$ "  
Minimum Ice Cham-  
ber:  
Width 33", Depth 17",  
Height 16"



No. EC-11-W  
Evaporator  
Height 5", Width 5",  
Depth 10 $\frac{1}{4}$ "  
Minimum Ice Cham-  
ber:  
Width 5 $\frac{1}{2}$ ", Depth 12",  
Height 7"



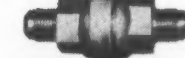
No. EC-62 Evaporator  
Height 7", Width 5 $\frac{1}{4}$ ", Depth  
48"  
Minimum Ice Chamber:  
Width 7", Depth 54", Height 9"



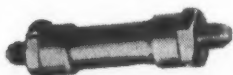
No. EC-67 Evaporator  
Height 7", Width 5 $\frac{1}{4}$ ", Depth 60 $\frac{1}{4}$ "  
Minimum Ice Chamber:  
Width 6 $\frac{1}{2}$ ", Depth 61", Height 9"



No. EC-64 Evaporator  
Height 7", Width 5 $\frac{1}{4}$ ", Depth 60"  
Minimum Ice Chamber:  
Width 7", Depth 68", Height 9"



LIQUID FILTER with  
following size fittings:  
 $\frac{1}{4}$ " Male Flared  
 $\frac{1}{2}$ " Standard Pipe  
thread  
 $\frac{3}{4}$ " Standard Pipe  
thread  
 $\frac{1}{2}$ " Male Flared  
 $\frac{1}{4}$ " Male Flared  
 $\frac{3}{8}$ " Male Flared



Liquid Strainer  
 $\frac{1}{4}$ " Male Flared  
Fittings



No. EC-66 Evaporator  
Height 7", Width 7 $\frac{1}{2}$ ", Depth  
48 $\frac{1}{4}$ "  
Minimum Ice Chamber:  
Width 6 $\frac{1}{2}$ ", Depth 48", Height  
9"



Liquid Receiver  
to Customer's Blue-  
print Specifications



Non-Adjustable Hanger



Adjustable Hanger

Write  
or wire for  
bulletins on  
Standard Re-  
frigerating Ap-  
pliances (sold only  
to refrigerating ma-  
chine manufacturers).

## FEDDERS MFG. CO.

Buffalo, N. Y.

F. B. RILEY  
Factory Representative

320 Beaubien St., DETROIT, MICH.

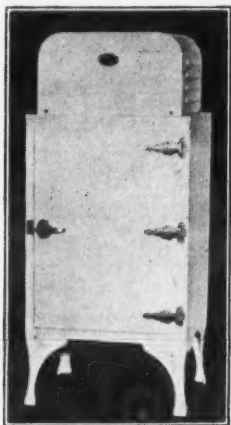


## NEW EQUIPMENT

### RICE PRODUCTS HAS NEW DOMESTIC MODEL WITH THE UNIT ON TOP

RICE Products, Inc., Detroit, through T. E. Carpenter, vice president and general manager announces a new self-contained domestic unit for 1929.

This unit has been in the course of development for the past year. Quietness is an outstanding feature of the new machine according to the makers.



Rice

The condensing unit is mounted on the top of the refrigerator and is provided with a metal cover. The mounting of the machine on the top, the manufacturers say, gives an advantage both from a mechanical standpoint and from a servicing standpoint.

The machine is direct connected. The only thing necessary to complete the installation of the unit is the plugging in of the electrical connection.

The motor is of the new capacitor type which operates quietly. The cabinet was designed to give the maximum of food storage space. The new model will be ready for distribution about April 1, according to the announcement.

### M & E INCLUDES CROSS FIN COOLING UNITS IN RECENT ADDITIONS

MERCHANT & Evans Co., Philadelphia, Pa., has developed a line of domestic freezers, typical models of which are shown in the accompanying illustrations. These are available in sizes to refrigerate cabinets up to 25 cubic feet gross capacity. The M & E freezer is a new direct expansion, flooded type unit with ample surface for cooling and also for making ice cubes quickly.

The M & E fin type freezer recently developed is now available for installation in showcases from 6 feet to 14 feet in length. The top icer type is 5 in. wide and 5 in. high. The side icer type is 5 in. x 8 in. and the walk-in cooler type is 8 in. x 8 in. These are all in various lengths and with ample capacity to eliminate shrinkage and loss of weight in foods.

M & E commercial compressors are offered in five sizes ranging in ice melting capacity from 275 lbs. to 1,100 lbs. These are suitable for use in multiple installation hook-ups.

### EXCELSIOR PRESENTS FOUR AMMONIA UNITS

THE Excelsior Motor Mfg. & Supply Co., Chicago, Ill., presents a new series of Excelsior refrigerating machines for 1929. This series consists of four ammonia units ranging in capacities from one-quarter ton to one-ton.

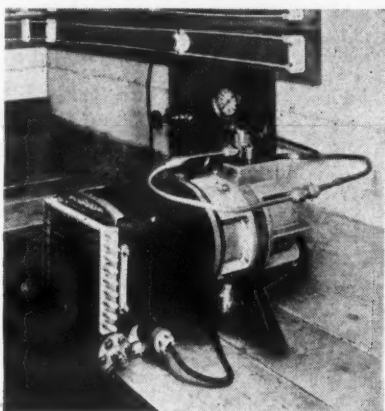
Many new features and refinements have been incorporated in this new series such as "V" belt drive; outside oiling device; Cooke Seal Ring in the stuffing box; increased condenser capacity and

other minor improvements that increase efficiency.

All Excelsior units are constructed of pressed steel and drop forgings throughout, making them very compact and sturdy. The compressors are two-cylinder with intake port cast en bloc. The condenser, cylinders and stuffing box are submerged in water. Complete high side equipment is furnished with the machine.

### HOLMES ROTARY UNIT ALLOWS ADDITIONAL FOOD SPACE IN BASE

THE 1929 line of Holmes Products, Inc., 205 East 42nd Street, New York, includes domestic models ranging from 4.5 to 9.5 cu. ft. food storage capacity. Four of these models the H-45, H-55, H-75 and H-90 have an exterior of lacquer and an



Holmes

interior of porcelain. The D-60 and D-80 models are porcelain exterior and interior.

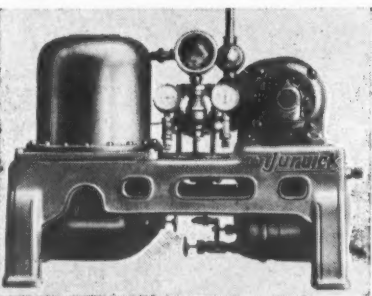
Each of these models carries four ice cube trays of twenty-one cubes each with the exception of the small 4.5 cu. ft. model which has three trays.

The rotary compressor is direct connected to a one-eighth horsepower Westinghouse motor. The entire condensing unit is very compact and when placed in the base of the cabinet takes up so little space that a compartment is available for the storage of vegetables.

### NEW QUARTER-TON UNIT ANNOUNCED BY AMERICAN ENGR. CO.

THE American Engineering Co., of Philadelphia, Pa., manufacturer of Juruick electric refrigerating machines, announces a new 1/4 ton automatic unit.

This unit has full thermostatic control, and is reported to be very economical and quiet in operation. All parts are assembled to a rigid one-piece base casting, making a very solid and attractive arrangement. Gages and control elements are grouped at a convenient central point. The level of the oil is visible at all times through the large gage glass. Oversize condenser capacity and a large capacity receiver for liquid ammonia are other advantages of design in the machine. Shut-off valves for all working parts permit easy access for inspection and cleaning. Every machine is tested by running under load with ammonia before it leaves factory.



Juruick

control, and is reported to be very economical and quiet in operation. All parts are assembled to a rigid one-piece base casting, making a very solid and attractive arrangement. Gages and control elements are grouped at a convenient central point. The level of the oil is visible at all times through the large gage glass. Oversize condenser capacity and a large capacity receiver for liquid ammonia are other advantages of design in the machine. Shut-off valves for all working parts permit easy access for inspection and cleaning. Every machine is tested by running under load with ammonia before it leaves factory.

### CHAMPION ADDS 3 NEW COMPRESSORS

THE Champion Electric Co., 2742 No. Paulina St., Chicago, Ill., announces that its 1929 line of compressor units ranges from 1-6 to 1 1/2 h.p. sizes. Model No. 7 compressor suitable for self-contained installations ranging from the standard 5 cu. ft. cabinet up to about 12 cu. ft. capacity is a single cylinder unit and is equipped with either a 1-6 or 1/4 h.p. motor. The line also includes a 1-3 and a 1/2 h.p. belt driven compressor suitable for small commercial or small apartment installations. These are two cylinder, air cooled models. Recent additions also include compressors of 1/4, 1 and 1 1/2 h.p. sizes.

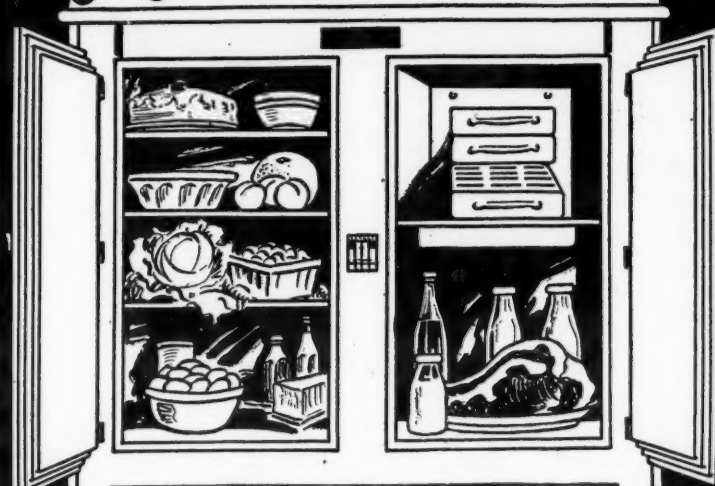
Another improvement is the new Champion float which is provided with a locking device and packless valves which make it possible to ship these units separately, or installed as self-contained models, without danger of damage to the float, needle or the needle seat.

### TWO NEW COMMERCIAL UNITS ADDED BY COOKE

Cooke Electric Refrigeration Co., 14-30 North Green Street, Chicago, Ill., reports the addition of two new commercial machines of 1-3 and 1/2 ton capacity.

Cooke compressors are of the reciprocating type driven by a V-belt and using ammonia as a refrigerant.

## Wayne Electric Refrigerator



By sheer merit alone—the Wayne Electric Refrigerator will help you serve many thousands of homes with carefree, economical refrigeration.

And our definite sales aid rendered to every dealer, and salesman—makes Wayne's franchise invaluable—and profitable! Full details—about Wayne Electric Refrigerators—and Oil Burners—sent on request!

WAYNE HOME EQUIPMENT CO.

Main Office and Factory, Fort Wayne, Ind.

## A Champion For Every Purpose

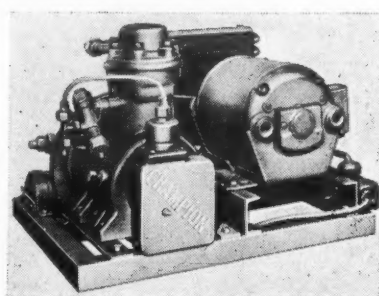
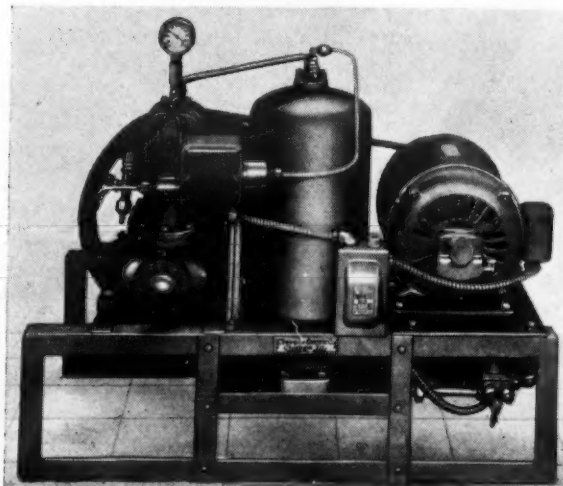
### NEW MODELS

Quiet, Efficient, Dependable,  
Insure success for  
every Champion  
distributor.

Write for our  
proposition covering  
the territory

you are  
covering

1 1/2 H. P.



1/6 H. P.

1/4 H. P.

1/3 H. P.

1/2 H. P.

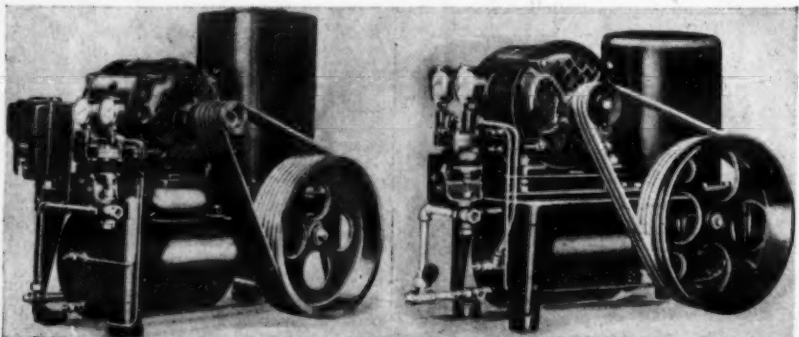
3/4 H. P.

Cooling Coils  
of all sizes

The New Champion  
self-locking float in-  
sures safe delivery  
and the elimination  
of float troubles.

Champion Electric Co.

2742 No. Paulina St.  
CHICAGO, ILL.



New Ammonia Units of Excelsior Motor Mfg. & Supply Co.

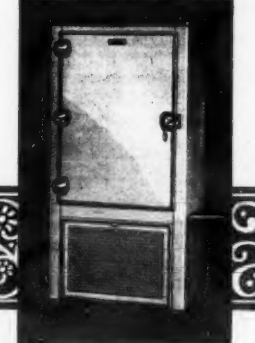
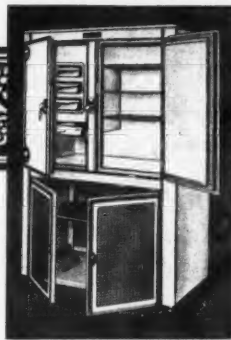
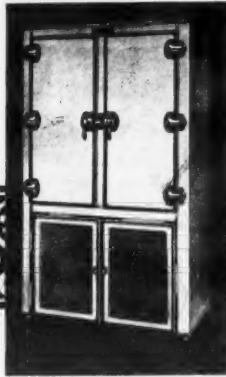
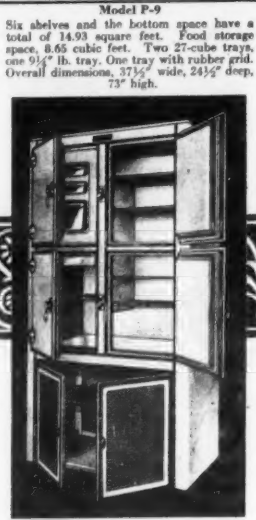
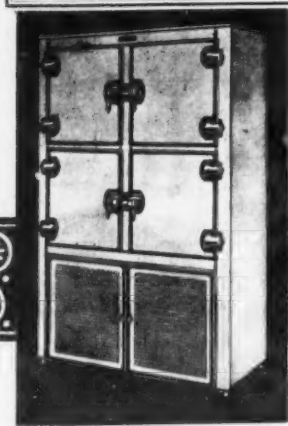






# Literature of Kelvinator, Frigidaire and Copeland Companies Shows

## Kelvinator Cabinets - All Porcelain Models



**Model P-9**  
Six shelves and the bottom space have a total of 14.93 square feet. Food storage space, 8.65 cubic feet. Two 27-cube trays, one 9 1/2" x 18" tray. One tray with rubber grid. Overall dimensions, 37 1/2" wide, 24 1/2" deep, 73" high.

**Model P-12**  
Six shelves and the bottom space have a total of 11.39 square feet. Food storage space, 7.08 cubic feet. Four 27-cube trays. One tray with rubber grid. Overall dimensions, 37 1/2" wide, 24 1/2" deep, 66" high.

**Model P-8**  
Three shelves and the bottom space have a total of 9.94 square feet. Food storage space, 5.28 cubic feet. Three 27-cube trays. One tray with rubber grid. Overall dimensions, 37 1/2" wide, 24 1/2" deep, 57" high.

**Model P-6**  
Exterior of white porcelain with French Gray Trim. Interior, white porcelain. Three shelves and bottom space have a total of 9.25 square feet. Food storage space, 4.71 cubic feet. Two 27-cube trays. One tray with rubber grid. Overall dimensions, 27 1/2" wide, 22 1/2" deep, 56 1/2" high.

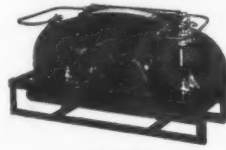
## 1929 KELVINATOR CONDENSING UNITS



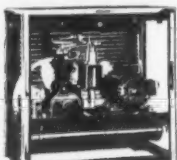
**Model AS**  
(No. 5587)  
Overall dimensions—22 1/2" wide, 18 1/2" deep, 17 1/2" high. 1/2 H. P. Two cylinder, air cooled type.



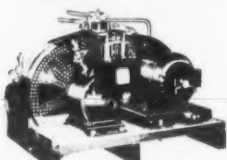
**Model AJ**  
(No. 5512)  
Overall dimensions—20" wide, 15" deep, 15 1/2" high. 1/2 H. P. Single cylinder, air cooled type.



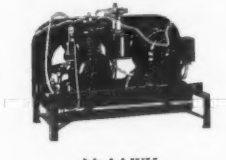
**Model AK**  
(No. 5500)  
Overall dimensions—20 1/2" wide, 16 1/2" deep, 23 1/2" high. 1 1/2 H. P. Four cylinder, air cooled type.



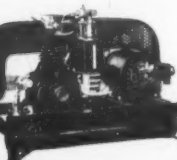
**Model AFE**  
(No. 5577)  
Overall dimensions—20 1/2" wide, 18 1/2" deep, 20 1/2" high. 1 1/2 H. P. Two cylinder, air cooled type.



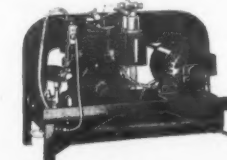
**Model WB**  
(No. 5564)  
Overall dimensions—20 1/2" wide, 24 1/2" deep, 23" high. 1 1/2 H. P. Two cylinder, water cooled type.



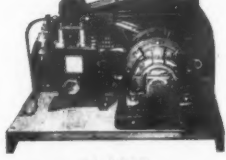
**Model WH**  
(No. 5574)  
Overall dimensions—20 1/2" wide, 16 1/2" deep, 23 1/2" high. 1 1/2 H. P. Four cylinder, water cooled type.



**Model AF**  
(No. 5563)  
Overall dimensions—20 1/2" wide, 18 1/2" deep, 23 1/2" high. 1 1/2 H. P. Two cylinder, air cooled type.



**Model WF**  
(No. 5572)  
Overall dimensions—20 1/2" wide, 24 1/2" deep, 23 1/2" high. 1 1/2 H. P. Two cylinder, water cooled type.



**Model LB**  
(No. 5542)  
Overall dimensions—20 1/2" wide, 23 1/2" deep, 23" high. 1 1/2 H. P. Single cylinder, air cooled type.

## KELVINATOR COMMERCIAL COOLING COILS

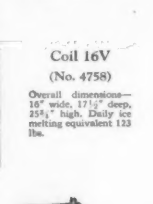
**Coil 19V**  
(No. 4759)  
Overall dimensions—18" wide, 19 1/2" deep, 29 1/2" high. Daily ice melting equivalent 165 lbs.



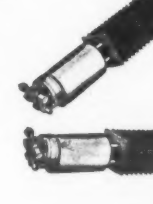
**Coil 19VT**  
(No. 4784)  
Overall dimensions—18" wide, 19 1/2" deep, 29 1/2" high. Daily ice melting equivalent 165 lbs.



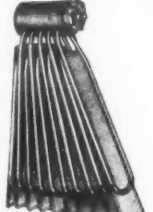
**Coil 16V**  
(No. 4758)  
Overall dimensions—16" wide, 17 1/2" deep, 25 1/2" high. Daily ice melting equivalent 123 lbs.



**Coil 16VT**  
(No. 4783)  
Overall dimensions—16" wide, 17 1/2" deep, 25 1/2" high. Daily ice melting equivalent 123 lbs.



**Coil 6V**  
(No. 4821)  
Overall dimensions—6" wide, 9" high, 13 1/2" deep. Daily ice melting equivalent 100 lbs.



**Coil WC-A1**  
(No. 16014)  
Overall dimensions—13 1/2" diameter, 13 1/2" high.



## WATER COOLER COILS

**Coil WC-A1**  
(No. 16014)  
Overall dimensions—13 1/2" diameter, 13 1/2" high.



**Coil 36X**  
(No. 4949)  
Overall dimensions—36" wide, 36" long, 5 1/2" high. Daily ice melting equivalent 112 lbs.



**Coil 25XD**  
(No. 4733)  
Overall dimensions—25" wide, 25" long, 5 1/2" high. Daily ice melting equivalent 143 lbs.



**Coil 48X**  
(No. 4872)  
Overall dimensions—48" wide, 48" long, 5 1/2" high. Daily ice melting equivalent 129 lbs.



**Coil 66XD**  
(No. 4885)  
Overall dimensions—66" wide, 66" long, 5 1/2" high. Daily ice melting equivalent 202 lbs.



## MULTIPLE EVAPORATORS MULTIPLE COOLING COILS



**Coil 18R**  
(No. 4263)  
Overall dimensions—21 1/2" wide, 16 1/2" deep, 16 1/2" high.



**Coil 8VM**  
(No. 4892)  
Overall dimensions—12 1/2" wide, 11" deep, 16 1/2" high. Daily ice melting capacity, four 27-cube trays per freezing.



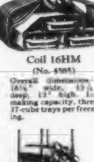
**Coil 18M**  
(No. 4837)  
Overall dimensions—21 1/2" wide, 16 1/2" deep, 16 1/2" high. Daily ice melting capacity, four 27-cube trays per freezing.



**Coil 530R**  
(No. 4267)  
Overall dimensions—75 1/2" wide, 18 1/2" deep, 13 1/2" high.



**Coil 16VM**  
(No. 4891)  
Overall dimensions—12 1/2" wide, 11" deep, 16 1/2" high. Daily ice melting capacity, four 27-cube trays per freezing.



**Coil 16HM**  
(No. 4893)  
Overall dimensions—12 1/2" wide, 11" deep, 16 1/2" high. Daily ice melting capacity, four 27-cube trays per freezing.



**Coil 130R**  
(No. 4266)  
Overall dimensions—71 1/2" wide, 16 1/2" deep, 18 1/2" high.



**Coil 24VM**  
(No. 4894)  
Overall dimensions—12 1/2" wide, 11" deep, 16 1/2" high. Daily ice melting capacity, four 27-cube trays per freezing.



**Coil 24HM**  
(No. 4895)  
Overall dimensions—12 1/2" wide, 11" deep, 16 1/2" high. Daily ice melting capacity, four 27-cube trays per freezing.



**Coil 440**  
(No. 4618)  
Overall dimensions—13" wide, 21 1/2" deep, 20 1/2" high.



**Coil 7HM**  
(No. 4797)  
Overall dimensions—13" wide, 17" deep, 8 1/2" high. Daily ice melting capacity, three 27-cube trays per freezing.



**Coil 7HM**  
(No. 4797)  
Overall dimensions—13" wide, 17" deep, 8 1/2" high. Daily ice melting capacity, three 27-cube trays per freezing.

## KELVINATOR CROSS FIN COOLING UNITS



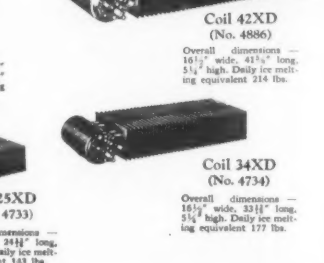
**Coil 72X**  
(No. 4871)  
Overall dimensions—41 1/2" wide, 22 1/2" long, 5 1/2" high. Daily ice melting equivalent 207 lbs.



**Coil 66XD**  
(No. 4885)  
Overall dimensions—66" wide, 66" long, 5 1/2" high. Daily ice melting equivalent 202 lbs.



**Coil 48X**  
(No. 4872)  
Overall dimensions—48" wide, 48" long, 5 1/2" high. Daily ice melting equivalent 129 lbs.



**Coil 42XD**  
(No. 4886)  
Overall dimensions—42" wide, 42" long, 5 1/2" high. Daily ice melting equivalent 114 lbs.



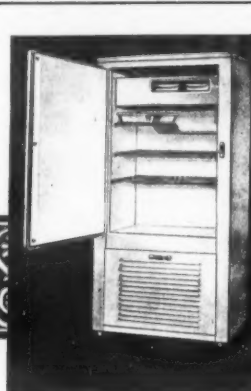
**Coil 36X**  
(No. 4949)  
Overall dimensions—36" wide, 36" long, 5 1/2" high. Daily ice melting equivalent 112 lbs.



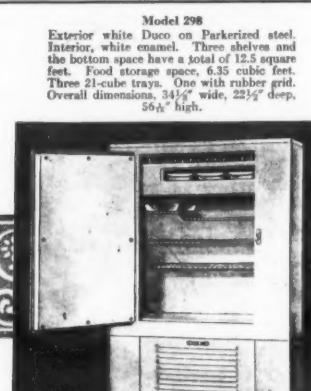
**Coil 34XD**  
(No. 4734)  
Overall dimensions—34" wide, 34" long, 5 1/2" high. Daily ice melting equivalent 117 lbs.

## Kelvinator Cabinets - Sealtite Construction

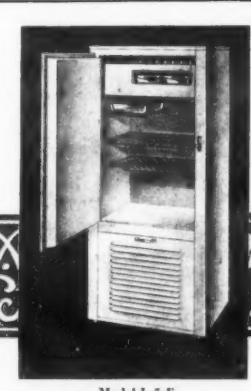
**Model 310**  
Exterior white Duco on Parkersized steel. Interior, white enamel. Three shelves and the bottom space have a total of 9.4 square feet. Food storage space, 4.82 cubic feet. Two 21-cube trays. One with rubber grid. Overall dimensions, 26 1/2" wide, 22 1/2" deep, 56 1/2" high.



**Model 273**  
Exterior, white Duco on Parkersized steel. Interior, white porcelain. Three shelves and the bottom space have a total of 9.25 square feet. Food storage space, 4.71 cubic feet. Two 21-cube trays. One with rubber grid. Overall dimensions, 26 1/2" wide, 22 1/2" deep, 56 1/2" high.



**Model 298**  
Exterior white Duco on Parkersized steel. Interior, white enamel. Three shelves and the bottom space have a total of 12.5 square feet. Food storage space, 6.35 cubic feet. Three 21-cube trays. One with rubber grid. Overall dimensions, 34 1/2" wide, 22 1/2" deep, 56 1/2" high.



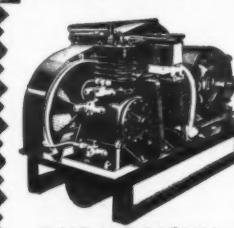
**Model L-5-E**  
Exterior, white Duco on Parkersized steel. Interior, white porcelain. Three shelves and the bottom space have a total of 8.73 square feet. Food storage space, 4.43 cubic feet. Two 21-cube trays. One with rubber grid. Overall dimensions, 23 1/2" wide, 22 1/2" deep, 54 1/2" high.

**Model L-5-P**  
The Model L-5-P is the same as L-5-E, except has porcelain interior.

# KELVINATOR

above

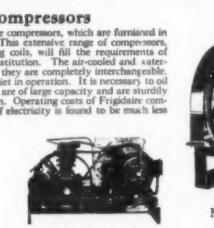
# FRIGIDAIRE



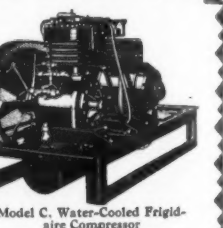
**Model D, Air-Cooled Frigidaire Compressor**  
Width 24 1/2", Length 48", Height 22"  
The Model D Air-Cooled Compressor has been designed for installations requiring equipment of high capacity. It is a compact and highly efficient in operation.



**Model A, Air-Cooled Frigidaire Compressor**  
Width 18 1/2", Length 32", Height 18 1/2"  
This compressor is Frigidaire's latest development in household refrigeration machinery. It has a new and very efficient radiator type condenser. In special spring arrangement assures quiet operation, and adds to the life of the equipment.



**Model E, Air-Cooled Frigidaire Compressor**  
Width 16 1/2", Length 25 1/2", Height 15 1/2"  
The Model E Air-Cooled Compressor is designed for use with the E-3 Coil to refrigerate small household cabinets where larger equipment is not needed. While it is the smallest compressor in the line, it embodies all the advanced engineering features of the larger Frigidaire Compressors.



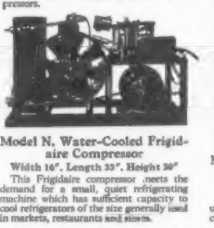
**Model C, Water-Cooled Frigidaire Compressor**  
Width 26", Length 48", Height 22"  
Because of its large capacity, the Model C Compressor will refrigerate large cold rooms and walk-in boxes. It will also handle very satisfactory multiple installations of Frigidaire equipment.



**Model O, Air-Cooled Frigidaire Compressor**  
Width 16", Length 32", Height 20"  
One of the greatest advantages of this compressor is its adaptability to large commercial installations. It can be used to operate display and frozen counter, ice cream cabinets, and cooling rooms.



**Model Y, Water-Cooled Frigidaire Compressor**  
Width 16", Length 32", Height 20"  
The Model Y Water-Cooled Compressor has been designed to meet the requirements of commercial installations where a medium capacity compressor is necessary.



**Model N, Water-Cooled Frigidaire Compressor**  
Width 16", Length 32", Height 20"  
This Frigidaire compressor meets the demand for a small, quiet refrigerating machine which has sufficient capacity to cool refrigerant of the size generally found in markets, restaurants and homes.

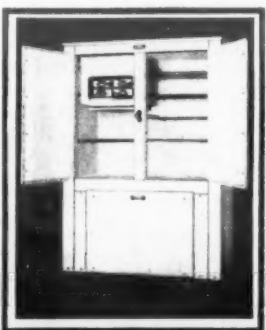


**Model K, Air-Cooled Frigidaire Compressor**  
Width 14", Length 30", Height 20"  
The Model K Air-Cooled Compressor is used to operate ice cream cabinets and in connection with commercial installations.

## Six Frigidaire Cabinets with White Duco Finish, and

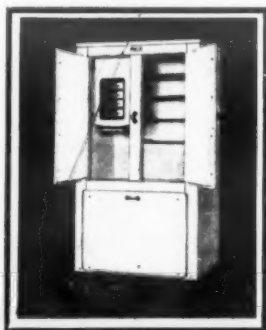
### The Complete Line of FRIGIDAIRE

FRIGIDAIRE automatic refrigerators may be purchased in eleven cabinet models. These cabinets range in size from approximately five to eighteen cubic feet food storage space. There is a model specially adapted for installation in every home, large or small. For the home where refrigeration requirements are small, either the Model V-5 or V-5-P is well suited. Both the cabinets are identical in size and shape, but differ only in finish. One is in white Duco and the other is in white porcelain enamel. You may install a Model V cabinet at surprisingly low cost. There are five cabinets included in the D line. These cabinets are finished in lustrous white Duco with white porcelain-enamel lined compartments inside. These distinctive models are built in size to meet every household refrigeration demand. Inquire about the cost of these cabinets. You will find them well within your means. And for those who prefer cabinets finished throughout in porcelain enamel, there are six cabinet models in the AF line from which to make a selection. These cabinets are finished in beautiful Tu-Tone porcelain-enamel of gray and white throughout. They represent the ultimate in cabinet design, yet are offered at exceptionally low cost. All Frigidaire cabinets are sturdily constructed of extra heavy metal panels. They are thoroughly insulated with Frigidaire-approved insulating material. And they are progressively assembled, inspected and tested at the Frigidaire factory by skilled craftsmen.



**Model D-12 Frigidaire**

Food Storage Capacity—Approximately 12 cubic feet.  
Shelf Space—Approximately 19 square feet.  
Exterior Dimensions—40 1/2" wide, 28" deep, 67 1/2" high. (Depth includes 2" in rear for tubing and ventilation, but does not include door and hardware.)  
Number of Trays—4, for making ice or frozen desserts.  
Ice Making—With No. 59 Coil—46 cubes, approximately 1 1/2 lbs. of ice at one freezing.  
Cabinets—Exterior: Duco on steel. Interior: Copper, stainless, porcelain-enamel lining.



**Model D-9 Frigidaire**

Food Storage Capacity—Approximately 9 cubic feet.  
Shelf Space—Approximately 14 square feet.  
Exterior Dimensions—37 1/2" wide, 28" deep, 67 1/2" high. (Depth includes 2" in rear for tubing and ventilation, but does not include door and hardware.)  
Number of Trays—4, for making ice or frozen desserts.  
Ice Making—With No. 19 Coil—32 cubes, approximately 1 1/2 lbs. of ice at one freezing.  
Cabinets—Exterior: Duco on steel. Interior: Copper, stainless, porcelain-enamel lining.



**Model D-7-2 Frigidaire**

Food Storage Capacity—Approximately 7 cubic feet.  
Shelf Space—Approximately 11 square feet.  
Exterior Dimensions—35 1/2" wide, 28" deep, 67 1/2" high. (Depth includes 2" in rear for tubing and ventilation, but does not include door and hardware.)  
Number of Trays—3, for making ice or frozen desserts.  
Ice Making—With No. 8 Coil—24 cubes, approximately 1 1/2 lbs. of ice at one freezing.  
Cabinets—Exterior: Duco on steel. Interior: Copper, stainless, porcelain-enamel lining.



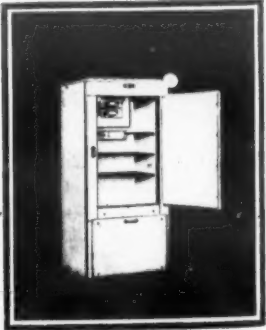
**Model D-7-1 Frigidaire**

Food Storage Capacity—Approximately 7 cubic feet.  
Shelf Space—Approximately 11 square feet.  
Exterior Dimensions—37" wide, 28" deep, 63" high. (Depth includes 2" in rear for tubing and ventilation, but does not include door and hardware.)  
Number of Trays—2, for making ice or frozen desserts.  
Ice Making—With No. 5-TFF Coil—41 cubes, approximately 4 lbs. of ice at one freezing.  
Cabinets—Exterior: Duco on steel. Interior: Copper, stainless, porcelain-enamel lining.



**Model D-6 Frigidaire**

Food Storage Capacity—Approximately 6 cubic feet.  
Shelf Space—Approximately 9 square feet.  
Exterior Dimensions—33 1/2" wide, 28" deep, 61 1/2" high. (Depth includes 2" in rear for tubing and ventilation, but does not include door and hardware.)  
Number of Trays—2, for making ice or frozen desserts.  
Ice Making—With RE-5 Unit—36 cubes, approximately 5 lbs. of ice at one freezing.  
Cabinets—Exterior: Duco on steel. Interior: Copper, stainless, porcelain-enamel lining.

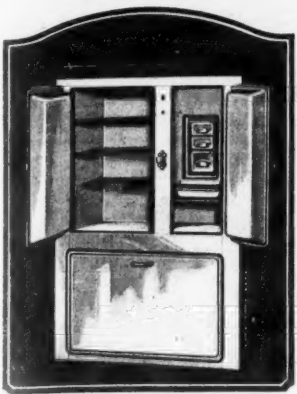


**Model V-5 Frigidaire**

Food Storage Capacity—Approximately 5 cubic feet.  
Shelf Space—Approximately 8 square feet.  
Exterior Dimensions—30 1/2" wide, 24" deep, 50 1/2" high. (Depth includes 2" in rear for tubing and ventilation, but does not include door and hardware.)  
Number of Trays—2, for making ice or frozen desserts.  
Ice Making—With RE-3 Unit—30 cubes, approximately 5 lbs. of ice at one freezing.  
Cabinets—Exterior: Duco on steel. Interior: Copper, stainless, porcelain-enamel lining.

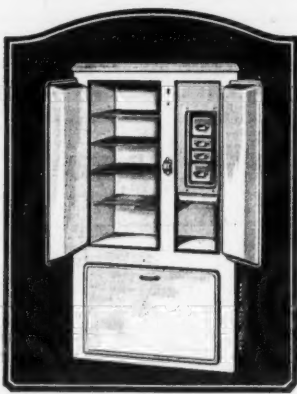


# Complete Lines for Homes, Apartments and Commercial Applications



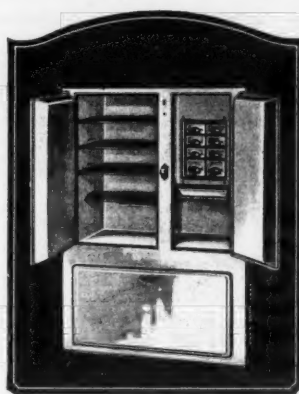
Copeland De Luxe Six

Outside Dimensions—Height, 53 1/2 in.; Width, 35 1/2 in.; Depth, 23 1/2 in. Exterior Finish—Vitreous porcelain on Armo Iron. Body, white. Top in color. Six choices. Hardware—Specially designed, satin nickel finish, automatic. Number of Doors—Two, equipped with double compression gaskets. Food Storage Capacity—Over 8 1/2 cu. ft. Shelf Space—Over 12 sq. ft. Interior Finish—One-piece, white, vitreous porcelain on Armo Iron, with rounded covers. Shelves—Extra heavy frame with welded parallel bars. Ice Cubes—108 or 6.95 lbs. at one freezing. Trays—Three. One deep tray for freezing desserts. Cold tray for crispings salads, storing ice cubes, etc. Insulation—2-in. wrapped corkboard. Acoustically treated. Electric Light—With ruby indicator.



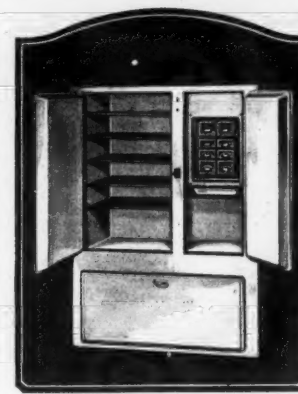
Copeland De Luxe Eight

Outside Dimensions—Height, 61 1/2 in.; Width, 35 1/2 in.; Depth, 23 1/2 in. Exterior Finish—Vitreous porcelain on Armo Iron. Body, white. Top in color. Six choices. Hardware—Specially designed, satin nickel finish, automatic. Number of Doors—Two, equipped with double compression gaskets. Food Storage Capacity—Over 8 1/2 cu. ft. Shelf Space—Over 12 sq. ft. Interior Finish—One-piece, white, vitreous porcelain on Armo Iron, with rounded covers. Shelves—Extra heavy frame with welded parallel bars. Ice Cubes—108 or 10.6 lbs. at one freezing. Trays—Four. Two deep trays for freezing desserts. Cold tray for crispings salads, storing ice cubes, etc. Insulation—2-in. wrapped corkboard. Acoustically treated. Electric Light—With ruby indicator.



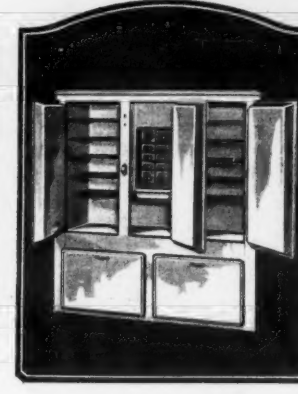
Copeland De Luxe Ten

Outside Dimensions—Height, 63 1/2 in.; Width, 42 1/2 in.; Depth, 23 1/2 in. Exterior Finish—Vitreous porcelain on Armo Iron. Body, white. Top in color. Six choices. Hardware—Specially designed, satin nickel finish, automatic. Number of Doors—Two, equipped with double compression gaskets. Food Storage Capacity—Over 10 1/2 cu. ft. Shelf Space—Over 17 1/2 sq. ft. Interior Finish—One-piece, white, vitreous porcelain on Armo Iron, with rounded covers. Shelves—Extra heavy frame with welded parallel bars. Ice Cubes—270 or 17.2 lbs. at one freezing. Trays—Eight. Four deep trays for freezing desserts. Cold tray for crispings salads, storing ice cubes, etc. Insulation—2-in. wrapped corkboard. Acoustically treated. Electric Light—With ruby indicator.



Copeland De Luxe Fourteen

Outside Dimensions—Height, 69 1/2 in.; Width, 48 in.; Depth, 24 1/2 in. Exterior Finish—Vitreous porcelain on Armo Iron. Body, white. Top in color. Six choices. Hardware—Specially designed, satin nickel finish, automatic. Number of Doors—Two, equipped with double compression gaskets. Food Storage Capacity—Over 14 1/2 cu. ft. Shelf Space—Over 24 sq. ft. Interior Finish—One-piece, white, vitreous porcelain on Armo Iron, with rounded covers. Shelves—Extra heavy frame with welded parallel bars. Ice Cubes—374 or 21.2 lbs. at one freezing. Trays—Eight. Four deep trays for freezing desserts. Cold tray for crispings salads, storing ice cubes, etc. Insulation—2-in. wrapped corkboard. Acoustically treated. Electric Light—With ruby indicator.



Copeland De Luxe Twenty

Outside Dimensions—Height, 69 1/2 in.; Width, 61 1/2 in.; Depth, 24 1/2 in. Exterior Finish—Vitreous porcelain on Armo Iron. Body, white. Top in color. Six choices. Hardware—Specially designed, satin nickel finish, automatic. Number of Doors—Three, equipped with double compression gaskets. Food Storage Capacity—Over 20 1/2 cu. ft. Shelf Space—Over 36 sq. ft. Interior Finish—One-piece, white, vitreous porcelain on Armo Iron, with rounded covers. Shelves—Extra heavy frame with welded parallel bars. Ice Cubes—378 or 24.5 lbs. at one freezing. Trays—Ten. Four deep trays for freezing desserts. Cold tray for crispings salads, storing ice cubes, etc. Insulation—2-in. wrapped corkboard. Acoustically treated. Electric Light—With ruby indicator.



D-7 Cooling Unit



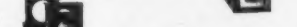
D-10 Cooling Unit



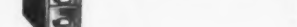
D-40 Cooling Unit



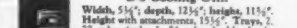
N-5 Cooling Unit



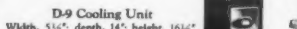
N-9 Cooling Unit



D-5 Cooling Unit



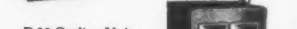
D-9 Cooling Unit



D-15 Cooling Unit



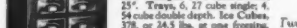
D-20 Cooling Unit



D-30 Cooling Unit



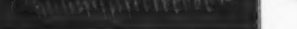
D-30 Cooling Unit



D-30 Cooling Unit



D-30 Cooling Unit



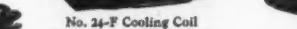
D-30 Cooling Unit



D-30 Cooling Unit



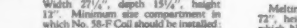
D-30 Cooling Unit



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D-30 Cooling Unit



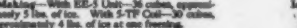
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D-30 Cooling Unit



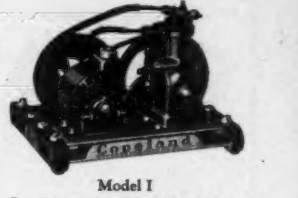
D-30 Cooling Unit



D-30 Cooling Unit



D-30 Cooling Unit



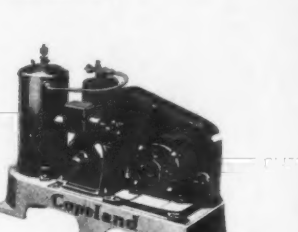
Model I

For self-contained installation in cabinets up to and including 20 cu. ft. Single cylinder 3/4 h. p. motor with rubber mounting. Entire unit spring and rubber mounted.



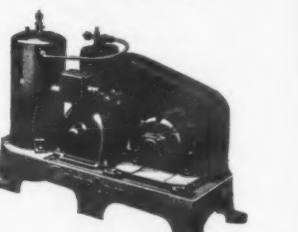
Model O

For use where installation is elsewhere than in base of cabinet. Equipped with belt guard and mounted on legs resting on rubber pads. Otherwise identical with Model I.



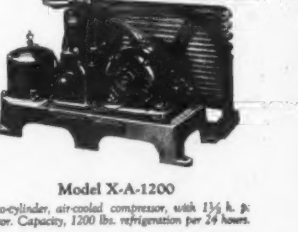
Model X-1200

Two-cylinder, water-cooled compressor, with 1 h. p. motor. Capacity, 1200 lbs. refrigeration per 24 hours.



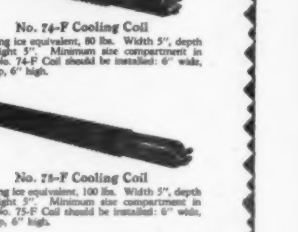
Model W-825

Two-cylinder, water-cooled compressor, with 3/4 h. p. motor. Capacity, 825 lbs. refrigeration per 24 hours.



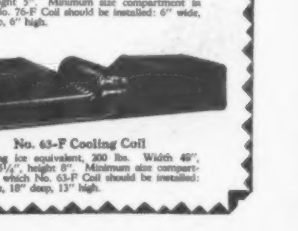
Model X-A-1200

Two-cylinder, air-cooled compressor, with 1 1/2 h. p. motor. Capacity, 1200 lbs. refrigeration per 24 hours.



Model X-A-1200

Two-cylinder, air-cooled compressor, with 1 1/2 h. p. motor. Capacity, 1200 lbs. refrigeration per 24 hours.



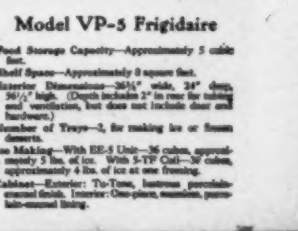
Model X-A-1200

Two-cylinder, air-cooled compressor, with 1 1/2 h. p. motor. Capacity, 1200 lbs. refrigeration per 24 hours.



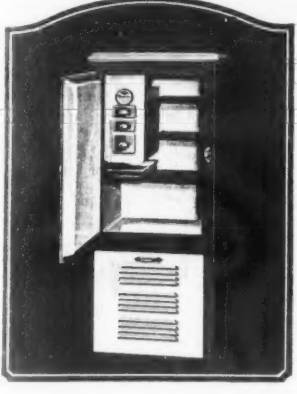
Model X-A-1200

Two-cylinder, air-cooled compressor, with 1 1/2 h. p. motor. Capacity, 1200 lbs. refrigeration per 24 hours.



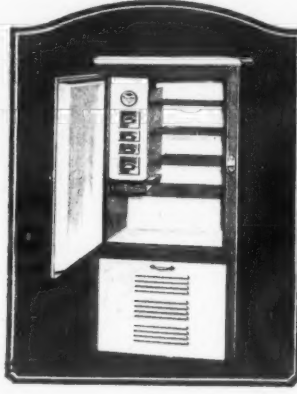
Model X-A-1200

Two-cylinder, air-cooled compressor, with 1 1/2 h. p. motor. Capacity, 1200 lbs. refrigeration per 24 hours.



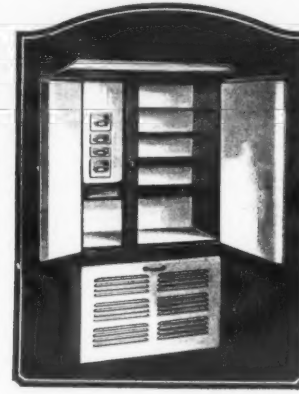
Copeland CS Five

Outside Dimensions—Height, 56 1/2 in.; Width, 25 1/2 in.; Depth, 22 in. Exterior Finish—Vitreous porcelain on Armo Iron. Gray body. White top, door and louvre panel. Hardware—Specially designed, satin nickel finish, automatic. Number of Doors—One, equipped with double compression gaskets. Food Storage Capacity—Over 5 cu. ft. Shelf Space—Over 12 sq. ft. Interior Finish—One-piece, white, vitreous porcelain on Armo Iron, with rounded covers. Shelves—Heavy wire, retinned. Ice Cubes—108 or 6.95 lbs. at one freezing. Trays—Three. One deep tray for freezing desserts. Cold tray for crispings salads, storing ice cubes, etc. Acoustically treated.



Copeland CS Seven

Outside Dimensions—Height, 61 1/2 in.; Width, 30 1/2 in.; Depth, 22 in. Exterior Finish—Vitreous porcelain on Armo Iron. Gray body. White top, door and louvre panel. Hardware—Specially designed, satin nickel finish, automatic. Number of Doors—One, equipped with double compression gaskets. Food Storage Capacity—Over 5 cu. ft. Shelf Space—Over 12 sq. ft. Interior Finish—One-piece, white, vitreous porcelain on Armo Iron, with rounded covers. Shelves—Heavy wire, retinned. Ice Cubes—162 or 10.6 lbs. at one freezing. Trays—Four. Two deep trays for freezing desserts. Cold tray for crispings salads, storing ice cubes, etc. Acoustically treated.



Copeland CS Nine

Outside Dimensions—Height, 61 1/2 in.; Width, 35 1/2 in.; Depth, 22 in. Exterior Finish—Vitreous porcelain on Armo Iron. Gray body. White top, door and louvre panel. Hardware—Specially designed, satin nickel finish, automatic. Number of Doors—One, equipped with double compression gaskets. Food Storage Capacity—Over 5 cu. ft. Shelf Space—Over 12 sq. ft. Interior Finish—One-piece, white, vitreous porcelain on Armo Iron, with rounded covers. Shelves—Heavy wire, retinned. Ice Cubes—162 or 10.6 lbs. at one freezing. Trays—Four. Two deep trays for freezing desserts. Cold tray for crispings salads, storing ice cubes, etc. Acoustically treated.



Copeland N-5-P

Outside Dimensions—Height, 55 1/2 in.; Width, 24 1/2 in.; Depth, 22 1/2 in. Exterior Finish—Satin white pyroxylin lacquer. Interior Finish—Satin white pyroxylin lacquer. Hardware—Polished nickel. Number of Doors—One, equipped with compression gasket. Food Storage Capacity—Over 5 cu. ft. Shelf Space—Over 7 1/2 sq. ft. Interior Finish—White, vitreous porcelain. Shelves—Woven wire, retinned. Ice Cubes—108 or 6.95 lbs. at one freezing. Trays—Three. One deep tray for freezing desserts. Cold tray for crispings salads, storing ice cubes, etc.



Copeland N-7-P

Outside Dimensions—Height, 62 in.; Width, 30 1/2 in.; Depth, 23 in. Exterior Finish—Satin white pyroxylin lacquer. Interior Finish—Satin white pyroxylin lacquer. Hardware—Polished nickel. Number of Doors—One, equipped with compression gasket. Food Storage Capacity—About 7 1/2 cu. ft. Shelf Space—Over 12 sq. ft. Interior Finish—White, vitreous porcelain. Shelves—Woven wire, retinned. Ice Cubes—162 or 10.6 lbs. at one freezing. Trays—Four. Two deep trays for freezing desserts. Cold tray for crispings salads, storing ice cubes, etc.



**No. 2-T Cooling Coil**  
Melting ice equivalent, 12 lbs. Width 8 1/2", depth 15", height 10". Minimum size compartment in which No. 2-T Coil should be installed: 14" wide, 18" deep, 12" high. Fits 12 ice cubes, approximately 8 lbs. of ice, at one time.

**No. 6-T Cooling Coil**  
Melting ice equivalent, 20 lbs. Width 8 1/2", depth 15", height 10". Minimum size compartment in which No. 6-T Coil should be installed: 14" wide, 18" deep, 12" high. Fits 12 ice cubes, approximately 8 lbs. of ice, at one time.

**No. 16 Cooling Coil**  
Melting ice equivalent, 12 lbs. Width 10 1/2", depth 15 1/2", height 12 1/2". Minimum size compartment in which No. 16 Coil should be installed: 14" wide, 18" deep, 12" high. Fits 12 ice cubes, approximately 8 lbs. of ice, at one time.

**No. 17-F Cooling Coil**  
Melting ice equivalent, 225 lbs. Width 16 1/2", depth 12 1/2", height 11 1/2". Minimum size compartment in which No. 17-F Coil should be installed: 18" wide, 22" deep, 35" high.

**No. 44-F Cooling Coil**  
Height 7 1/2", width 7 1/2", length 48"

**No. 45-F Cooling Coil**  
Height 7 1/2", width 7 1/2", length 60"

**No. 46-F Cooling Coil**  
Height 7 1/2", width 7 1/2", length 72"

**No. 47-F Cooling Coil**  
Height 7 1/2", width 7 1/2", length 84"

**No. 48-F Cooling Coil**  
Height 7 1/2", width 7 1/2", length 96"

**No. 49-F Cooling Coil**  
Height 7 1/2", width 7 1/2", length 108"

**No. 50-F Cooling Coil**  
Height 7 1/2", width 7 1/2", length 120"

**No. 51-F Cooling Coil**  
Height 7 1/2", width 7 1/2", length 132"

**No. 52-F Cooling Coil**  
Height 7 1/2", width 7 1/2", length 144"

**No. 53-F Cooling Coil**  
Height 7 1/2", width 7 1/2", length 156"

**No. 54-F Cooling Coil**  
Height 7 1/2", width 7 1/2", length 168"

**No. 55-F Cooling Coil**  
Height 7 1/2", width 7 1/2", length 180"

**No. 56-F Cooling Coil**  
Height 7 1/2", width 7 1/2", length 192"

**No. 57-F Cooling Coil**  
Height 7 1/2", width 7 1/2", length 204"

**No. 58-F Cooling Coil**  
Height 7 1/2", width 7 1/2", length 216"

**No. 59-F Cooling Coil**  
Height 7 1/2", width 7 1/2", length 228"

**No. 60-F Cooling Coil**  
Height 7 1/2", width 7 1/2", length 240"

**No. 61-F Cooling Coil**  
Height 7 1/2", width 7 1/2", length 252"

**No. 62-F Cooling Coil**  
Height 7 1/2", width 7 1/2", length 264"

**No. 63-F Cooling Coil**  
Height 7 1/2", width 7 1/2", length 276"

**No. 64-F Cooling Coil**  
Height 7 1/2", width 7 1/2", length 288"

**No. 65-F Cooling Coil**  
Height 7 1/2", width 7 1/2", length 300"

**No. 66-F Cooling Coil**  
Height 7 1/2", width 7 1/2", length 312"

**No. 67-F Cooling Coil**  
Height 7 1/2", width 7 1/2", length 324"

**No. 68-F Cooling Coil**  
Height 7 1/2", width 7 1/2", length 336"

**No. 69-F Cooling Coil**  
Height 7 1/2", width 7 1/2", length 348"

**No. 70-F Cooling Coil**  
Height 7 1/2", width 7 1/2", length 360"

**No. 71-F Cooling Coil**  
Height 7 1/2", width 7 1/2", length 372"

**No. 72-F Cooling Coil**  
Height 7 1/2", width 7 1/2", length 384"

**No. 73-F Cooling Coil**  
Height 7 1/2", width 7 1/2", length 396"

**No. 74-F Cooling Coil**  
Height 7 1/2", width 7 1/2", length 408"

**No. 75-F Cooling Coil**  
Height 7 1/2", width 7 1/2", length 420"

**No. 76-F Cooling Coil**  
Height 7 1/2", width 7 1/2", length 432"

**No. 77-F Cooling Coil**  
Height 7 1/2", width 7 1/2", length 444"

**No. 78-F Cooling Coil**  
Height 7 1/2", width 7 1/2", length 456"

**No. 79-F Cooling Coil**  
Height 7 1/2", width 7 1/2", length 468"

**No. 80-F Cooling Coil**  
Height 7 1/2", width 7 1/2", length 480"

**No. 81-F Cooling Coil**  
Height 7 1/2", width 7 1/2", length 492"

**No. 82-F Cooling Coil**  
Height 7 1/2", width 7 1/2", length 504"

**No. 83-F Cooling Coil**  
Height 7 1/2", width 7 1/2", length 516"

**No. 84-F Cooling Coil**  
Height 7 1/2", width 7 1/2", length 528"

**No. 85-F Cooling Coil**  
Height 7 1/2", width 7 1/2", length 540"

**No. 86-F Cooling Coil**  
Height 7 1/2", width 7 1/2", length 552"

**No. 87-F Cooling Coil**  
Height 7 1/2", width 7 1/2", length 564"

**No. 88-F Cooling Coil**  
Height 7 1/2", width 7 1/2", length 576"

**No. 89-F Cooling Coil**  
Height 7 1/2", width 7 1/2", length 588"

**No. 90-F Cooling Coil**  
Height 7 1/2", width 7 1/2", length 600"

**No. 91-F Cooling Coil**  
Height 7 1/2", width 7 1/2", length 612"

**No. 92-F Cooling Coil**  
Height 7 1/2", width 7 1/2", length 624"

**No. 93-F Cooling Coil**  
Height 7 1/2", width 7 1/2", length 636"

**No. 94-F Cooling Coil**  
Height 7 1/2", width 7 1/2", length 648"

**No. 95-F Cooling Coil**  
Height 7 1/2", width 7 1/2", length 660"

**No. 96-F Cooling Coil**  
Height 7 1/2", width 7 1/2", length 672"

**No. 97-F Cooling Coil**  
Height 7 1/2", width 7 1/2", length 684"

**No. 98-F Cooling Coil**  
Height 7 1/2", width 7 1/2", length 696"

**No. 99-F Cooling Coil**  
Height 7 1/2", width 7 1/2", length 708"

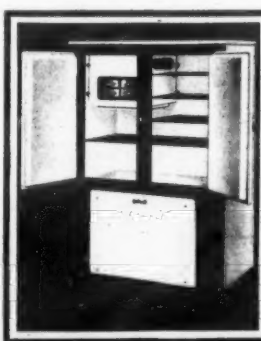
**No. 100-F Cooling Coil**  
Height 7 1/2", width 7 1/2", length 720"

## Seven in Glacier Gray and White Tu-Tone Porcelain-Enamel



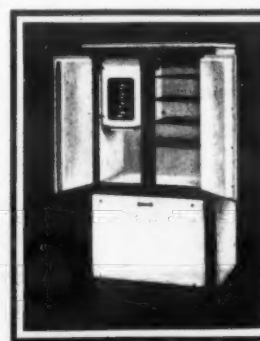
Model AP-18 Frigidaire

Food Storage Capacity—Approximately 18 cubic feet.  
Shelf Space—Approximately 21 square feet.  
Exterior Dimensions—46 1/2" wide, 28" deep, 67 1/2" high. (Depth includes 2" in back for tubing and ventilation, but does not include door and hardware.)  
Number of Trays—4, for making ice or frozen desserts.  
Ice Making—With No. 60 Coil—144 cubes, approximately 90 lbs. of ice at one freezing.  
Cabinet—Exterior: Tu-Tone, lacquer porcelain-enamel finish. Interior: One-piece, stainless, porcelain-enamel lining.



Model AP-12 Frigidaire

Food Storage Capacity—Approximately 12 cubic feet.  
Shelf Space—Approximately 19 square feet.  
Exterior Dimensions—40 1/2" wide, 28" deep, 67 1/2" high. (Depth includes 2" in back for tubing and ventilation, but does not include door and hardware.)  
Number of Trays—4, for making ice or frozen desserts.  
Ice Making—With No. 50 Coil—96 cubes, approximately 57 1/2 lbs. of ice at one freezing.  
Cabinet—Exterior: Tu-Tone, lacquer porcelain-enamel finish. Interior: One-piece, stainless, porcelain-enamel lining.



Model AP-9 Frigidaire

Food Storage Capacity—Approximately 9 cubic feet.  
Shelf Space—Approximately 14 square feet.  
Exterior Dimensions—37 1/2" wide, 28" deep, 67 1/2" high. (Depth includes 2" in back for tubing and ventilation, but does not include door and hardware.)  
Number of Trays—4, for making ice or frozen desserts.  
Ice Making—With No. 30 Coil—72 cubes, approximately 45 lbs. of ice at one freezing.  
Cabinet—Exterior: Tu-Tone, lacquer porcelain-enamel finish. Interior: One-piece, stainless, porcelain-enamel lining.



Model AP-7-2 Frigidaire

Food Storage Capacity—Approximately 7 cubic feet.  
Shelf Space—Approximately 11 square feet.  
Exterior Dimensions—33 1/2" wide, 28" deep, 61" high. (Depth includes 2" in back for tubing and ventilation, but does not include door and hardware.)  
Number of Trays—3, for making ice or frozen desserts.  
Ice Making—With No. 6 Coil—54 cubes, approximately 32 1/2 lbs. of ice at one freezing.  
Cabinet—Exterior: Tu-Tone, lacquer porcelain-enamel finish. Interior: One-piece, stainless, porcelain-enamel lining.



Model AP-7-1 Frigidaire

Food Storage Capacity—Approximately 7 cubic feet.  
Shelf Space—Approximately 11 square feet.  
Exterior Dimensions—33 1/2" wide, 28" deep, 61" high. (Depth includes 2" in back for tubing and ventilation, but does not include door and hardware.)  
Number of Trays—3, for making ice or frozen desserts.  
Ice Making—With No. 5-TF Coil—42 cubes, approximately 26 1/2 lbs. of ice at one freezing.  
Cabinet—Exterior: Tu-Tone, lacquer porcelain-enamel finish. Interior: One-piece, stainless, porcelain-enamel lining.



Model AP-6 Frigidaire

Food Storage Capacity—Approximately 6 cubic feet.  
Shelf Space—Approximately 9 square feet.  
Exterior Dimensions—32" wide, 28" deep, 61 1/2" high. (Depth includes 2" in back for tubing and ventilation, but does not include door and hardware.)  
Number of Trays—3, for making ice or frozen desserts.  
Ice Making—With No. 4-TF Coil—36 cubes, approximately 22 1/2 lbs. of ice at one freezing.  
Cabinet—Exterior: Tu-Tone, lacquer porcelain-enamel finish. Interior: One-piece, stainless, porcelain-enamel lining.



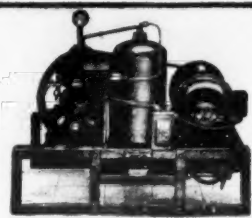
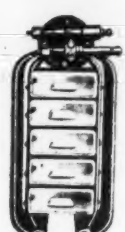
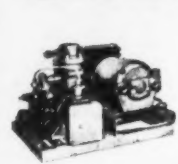
Model VP-5 Frigidaire

Food Storage Capacity—Approximately 5 cubic feet.  
Shelf Space—Approximately 8 square feet.  
Exterior Dimensions—30 1/2" wide, 24" deep, 56 1/2" high. (Depth includes 2" in back for tubing and ventilation, but does not include door and hardware.)  
Number of Trays—2, for making ice or frozen desserts.  
Ice Making—With No. 3-TF Coil—30 cubes, approximately 18 1/2 lbs. of ice at one freezing.  
Cabinet—Exterior: Tu-Tone, lacquer porcelain-enamel finish. Interior: One-piece, stainless, porcelain-enamel



# New Electric Refrigeration Equipment for 1929 (Continued)

## CHAMPION



MODEL No. 16 3/4 H.P. Motor 270 R.P.M.  
MODEL No. 18 1 H.P. Motor 340 R.P.M.  
MODEL No. 20 1 1/2 H.P. Motor 400 R.P.M.

## UNIVERSAL



\*No. 30. Vegetable bin or wire shelf may be fitted into lower compartment.



\*No. 40-40B. Lower compartment permits installation of compressor in cabinet.



\*No. 40B-40B. A special cabinet providing an abundance of non-refrigerated storage space.



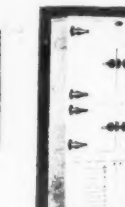
\*No. 40B. Designed for either remote or self-contained compressor installation.



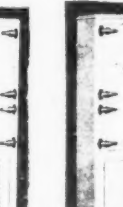
\*No. 71. Attractively designed with rounded corners and new glass door top.



\*No. 71. Showing deterring door and shelf arrangement of all door cabinet models.



\*No. 90. Heavily reinforced track lock and hinge hardware have special size finish.



\*No. 120. Automatic catches permit easy opening and prevent closing of doors.



\*No. 140. Particularly adapted for country estates, large homes or club residences.



\*No. 91. Correlated long strong lines complement lower finish with cabinet.



\*No. 70. The one pure type cabinet living in luxury and very easy to clean.



\*No. 130. Abundant space is provided for the storage of all types of foods.



\*No. 140. Modern styling shows efficient circulation of cold air in the food compartment.



\*No. 91. Correlated long strong lines complement lower finish with cabinet.



\*No. 70. The one pure type cabinet living in luxury and very easy to clean.



\*No. 130. Abundant space is provided for the storage of all types of foods.



\*No. 140. Modern styling shows efficient circulation of cold air in the food compartment.



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\*No. 130. Abundant space is provided for the storage of all types of foods.

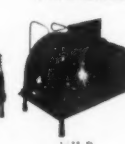


\*No. 140. Modern styling shows efficient circulation of cold air in the food compartment.

### COMPRESSORS



\*No. 91. Correlated long strong lines complement lower finish with cabinet.



\*No. 70. The one pure type cabinet living in luxury and very easy to clean.



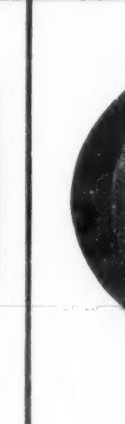
\*No. 130. Abundant space is provided for the storage of all types of foods.



\*No. 140. Modern styling shows efficient circulation of cold air in the food compartment.



\*No. 91. Correlated long strong lines complement lower finish with cabinet.



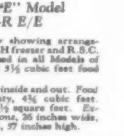
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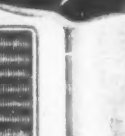
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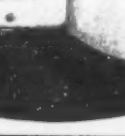
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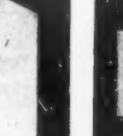
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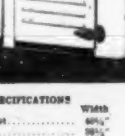
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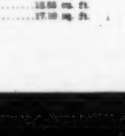
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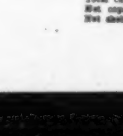
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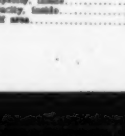
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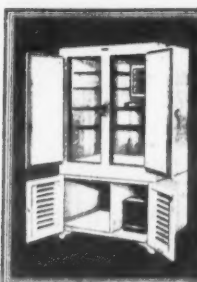


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\*No. 140. Modern styling shows efficient circulation of cold air in the food compartment.

## HOLMES



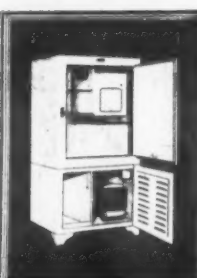
Model H-50 Porcelain Interior and Lacquer Exterior



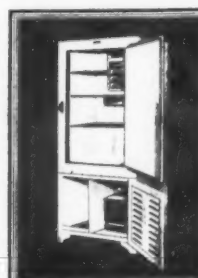
Model D-60 Porcelain Interior and Lacquer Exterior



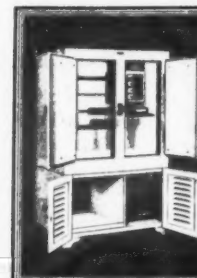
Model D-80 Porcelain Interior and Lacquer Exterior



Model H-45 Porcelain Interior and Lacquer Exterior

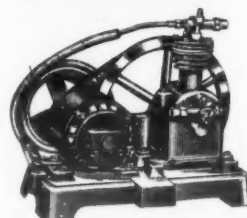
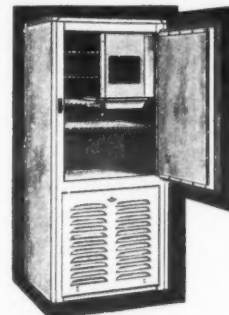
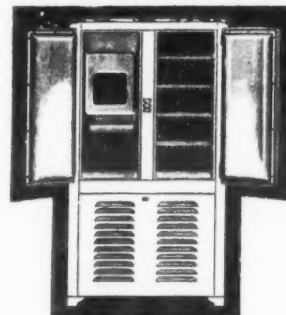


Model H-55 Porcelain Interior and Lacquer Exterior



Model H-75 Porcelain Interior and Lacquer Exterior

## ALPINCE



COMPRESSOR—Single Cylinder Motor—1/6 H.P. Drive—V-Belt Condenser—Fin Tube Coils—Temperature Fanning Unit—Floor Evaporator

MODEL	16	18	20
Food Storage	5 cu. ft.	7 cu. ft.	9 cu. ft.
Shelf Space	9 sq. ft.	11 sq. ft.	13 sq. ft.
Height	57 1/2"	63 1/2"	70 1/2"
Width	26 1/2"	35 1/2"	39 1/2"
Depth	22 1/2"	22 1/2"	22 1/2"
Int. Finish	Porcelain	Porcelain	Porcelain
Ext. Finish	Lacquer	Porcelain	Porcelain

## MERCHANT & EVANS



"M&E" Model 5-G "Bi-Tone"



"M&E" Model 7-G "Bi-Tone"

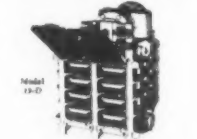


"M&E" Model 9-G "Bi-Tone"

Food Storage capacity, 5 1/2 cubic feet. Shelf space, 9 1/2 square feet. Exterior dimensions, 28 inches wide, 22 inches deep, 53 inches high. Number of ice trays, 2. Number of ice cubes, 86. Ice melting capacity, 22 lb. in 24 hours. Compressor, R.M. 440 R.P.M., 1/2 H.P. Motor, Frost-free, 12-15.

Food Storage capacity, 7 cubic feet. Shelf space, 11 square feet. Exterior dimensions, 34 1/2 inches wide, 25 inches deep, 54 inches high. Number of ice trays, 2. Number of ice cubes, 104. Ice melting capacity, 22 lb. in 24 hours. Compressor, R.M. 440 R.P.M., 3/4 H.P. Motor, Frost-free, 12-15.

Food Storage capacity, 9 cubic feet. Shelf space, 13 square feet. Exterior dimensions, 34 1/2 inches wide, 25 inches deep, 54 inches high. Number of ice trays, 2. Number of ice cubes, 104. Ice melting capacity, 22 lb. in 24 hours. Compressor, R.M. 440 R.P.M., 1/2 H.P. Motor, Frost-free, 12-15.



"M&E" Model 12-G "Bi-Tone"



"M&E" Model 14-G "Bi-Tone"



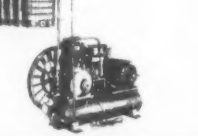
"M&E" Model 16-G "Bi-Tone"



"M&E" Model 18-G "Bi-Tone"



"M&E" Model 20-G "Bi-Tone"



"M&E" Model 22-G "Bi-Tone"



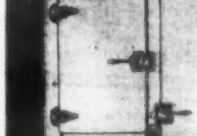
"M&E" Model 24-G "Bi-Tone"



"M&E" Model 26-G "Bi-Tone"



"M&E" Model 28-G "Bi-Tone"



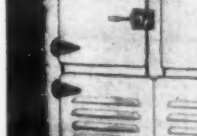
"M&E" Model 30-G "Bi-Tone"



"M&E" Model 32-G "Bi-Tone"



"M&E" Model 34-G "Bi-Tone"



"M&E" Model 36-G "Bi-Tone"



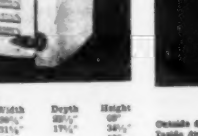
"M&E" Model 38-G "Bi-Tone"



"M&E" Model 40-G "Bi-Tone"



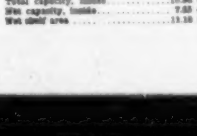
"M&E" Model 42-G "Bi-Tone"



"M&E" Model 44-G "Bi-Tone"



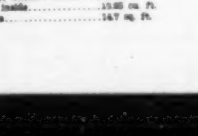
"M&E" Model 46-G "Bi-Tone"



"M&E" Model 48-G "Bi-Tone"



"M&E" Model 50-G "Bi-Tone"



"M&E" Model 52-G "Bi-Tone"



"M&E" Model 54-G "Bi-Tone"



"M&E" Model 56-G "Bi-Tone"

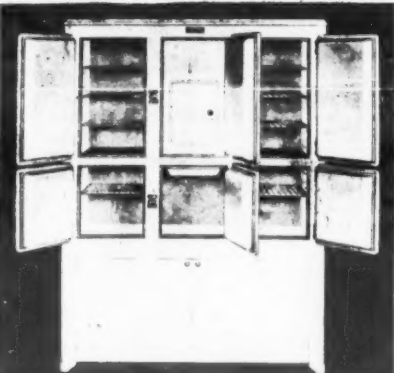


"M&E" Model 58-G "Bi-Tone"

## BRYANT



MODEL 12—Exterior Interior Exterior Finish—Black Model Lacquer



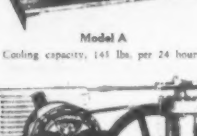
MODEL 14—Exterior Interior Exterior Finish—Black Model Lacquer



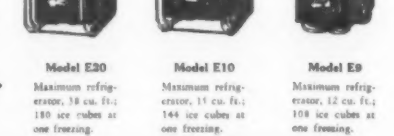
MODEL 16—Exterior Interior Exterior Finish—Black Model Lacquer



MODEL 18—Exterior Interior Exterior Finish—Black Model Lacquer



MODEL 20—Exterior Interior Exterior Finish—Black Model Lacquer



MODEL 22—Exterior Interior Exterior Finish—Black Model Lacquer



MODEL 24—Exterior Interior Exterior Finish—Black Model Lacquer



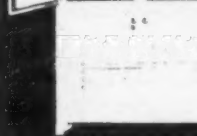
MODEL 26—Exterior Interior Exterior Finish—Black Model Lacquer



MODEL 28—Exterior Interior Exterior Finish—Black Model Lacquer



MODEL 30—Exterior Interior Exterior Finish—Black Model Lacquer



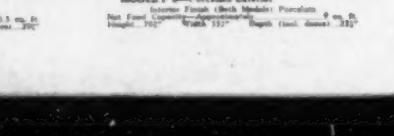
MODEL 32—Exterior Interior Exterior Finish—Black Model Lacquer



MODEL 34—Exterior Interior Exterior Finish—Black Model Lacquer

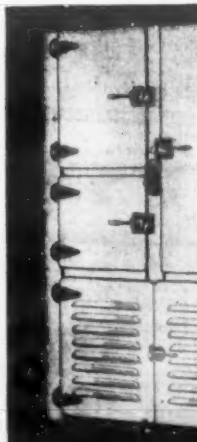


MODEL 36—Exterior Interior Exterior Finish—Black Model Lacquer



MODEL 38—Exterior Interior Exterior Finish—Black Model Lacquer

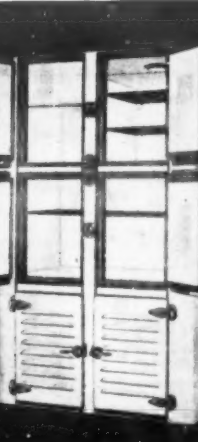
## WILLIAMS



MODEL 12—Exterior Interior Exterior Finish—Black Model Lacquer



MODEL 14—Exterior Interior Exterior Finish—Black Model Lacquer



MODEL 16—Exterior Interior Exterior Finish—Black Model Lacquer



# For MODERN Food Stores

## MCCRAY

### REFRIGERATOR EQUIPMENT

### For Machines of Any Type



Friedrich's Delicatessen Store, Milwaukee, Wisconsin. This photograph, with a McCray Top Counter in prominence, shows how well McCray equipment is adapted to use in the delicatessen store.



H. & S. Market, Detroit, Michigan. A very attractive display of meats made possible by three McCray Refrigerator Counters in this up-to-date Detroit market.



Hyman Chester Market, Washington, D. C. A prosperous store in the capital city. Mr. Chester gives much credit for his good business to McCray equipment.



Phillip Davidson Delicatessen, Passaic, New Jersey. A DeLuxe Delicatessen in the east. Thoroughly fitted out with McCray refrigerators and show cases.

**U**SING the basic principle of attractive display to make more sales, the modern food merchants are building bigger and more profitable business.

Out of 40 years of close contact with food merchants' needs, McCray has provided the finest and most efficient refrigerators and refrigerator display cases in a series of styles and sizes suited to food stores, large and small.

Pictured here are a few recent typical installations of McCray equipment. In food stores throughout the country you will find McCray. The very nameplate has come to be recognized as the sterling mark on a commercial refrigerator.

*Machine Refrigeration of Any Type May Be Used In All McCray Models.* The quality built into every hidden detail of McCray construction insures efficient, economical service—enables the machine to do its best work! Pure corkboard

insulation sealed with hydrolene is used in all McCrays. No changes are required for machine installation.

McCray is the world's largest builder of refrigerators for all purposes—in food stores, markets, hotels, restaurants, clubs, hospitals, institutions, florist shops and homes.

Dealers in mechanical refrigeration are invited to write for information regarding the McCray line. No obligation.

**MCCRAY REFRIGERATOR SALES CORPORATION**

Dept. 66, Kendallville, Indiana

Salesrooms in All Principal Cities (See Telephone Directory)

WORLD'S LARGEST MANUFACTURER OF REFRIGERATORS FOR ALL PURPOSES

# MCCRAY REFRIGERATORS



## Frigidaire Celebrates Fifth Birthday in Great Britain

By Dorothy Dignam, European Correspondent



Frigidaire House, Chapter Street, London

**H**ARDLY less dauntless than the Mayflower English Pilgrims who sought new connections in America were the American electric refrigeration pioneers who appeared in London for business during the season of 1924-25.

Frigidaire Limited was incorporated in Canada, but sprang, of course, from the parent organization in Dayton, Ohio. Arriving in England, they set up shop in an old wooden shed where floor space for all purposes of assemblage, service, sales and display did not total two thousand square feet. There were eleven persons on the payroll.

To-day, the pioneers are established in their own building, called Frigidaire House, on Chapter Street, in the historic Westminster district, London. The building comprises 154,000 square feet and there are nearly 360 persons on the staff.

A large display and salesroom is also maintained at Imperial House, Kingsway, which neighborhood is more accessible to the shopping public.

Capital, of course, has not been wanting in effecting this growth of Frigidaire in England, but Capital is this instance recognizes the hard work that has warranted every dollar of investment. When the 1928 annual sales conference was called in London, nearly 300 salesmen responded from all parts of England and Scotland and this thriving organization has grown entirely from the first little group of three salesmen working in London.

Frigidaire was first on the ground in England and is to-day credited with being first in volume of electric refrigerator sales. But their path as pioneers has been the usual one of perseverance in the face of many obstacles. Their task was first an educational one because it is difficult to sell mechanical refrigeration in a country where even "ice boxes" are a rarity. In one town of 170,000 persons in Southern England there are today less than a thousand refrigerators of all kinds and only one ice dealer. The climate is considered to be so mild in winter and so cool in summer that food should require no special care in the home; while as the use of preservatives was so general (until recently prohibited by law) that dealers did not experience the great loss by spoilage, that today makes some sort of refrigeration quite necessary.

Frigidaire has first to educate, then to sell, and always to persevere. A sales official of the company illustrates this untiring persistence with the following story from his London experience. He says:

"I called on a grocer every Tuesday morning for five months before I got his order. I was there at the store at precisely the same hour on the same day of the week even though I did not do more than say 'Good morning.' I urged the prospect to investigate some system of refrigeration—preferably all systems—and compare them with ours. Finally he surprised me by appearing at the salesroom and I thought my efforts were rewarded, but he walked out without responding, apparently, to any one of my appeals. This was on a Monday and the following morning I considered it almost useless to make my usual Tuesday call. I didn't want to go.

I could find a thousand excuses for not going. But I tried it once more and when I entered the door he called out from the back of the store and asked how large to make the check. He had the pen in his hand, waiting for me to come in as usual. The Englishman is deliberate in his way of doing business and we over here need to study that characteristic. When you've once secured his patronage, however, he's with you for life."

### REFRIGERATION PRODUCTS, INC. NEW FRIGIDAIRE DISTRIBUTORS

Refrigeration Products, Inc., has succeeded the A. F. Wood Co., 321 Main St., Evansville, Ind., Frigidaire distributors. The new company will occupy the same location.

Paul Jones, former sales manager of the A. F. Wood Co., is president of the new concern. George C. Garlinger is

vice president and C. J. Laine, secretary-treasurer. Incorporators in addition to the officers are E. Mead Johnson, Jr., and Irvin Unversadt.

### NEW ORLEANS SALESMAN IS FIRST IN G. E. TOP OF THE WORLD CONTEST

Lumay J. Mayeaux Nearly  
Doubles Quota Set

Lumay J. Mayeaux, of Woodward, Wight & Co., New Orleans distributors of General Electric refrigerators, won first place in the "Top of the World" contest for retail salesmen, conducted by the General Electric Co. The contest began Oct. 15 and closed Dec. 31. It entailed an imaginary airplane trip from Cleveland to the North Pole and return, mileage accomplished, compiled by sales made.

Eight thousand salesmen vied for honors in the race which covered 10,000 miles. Mr. Mayeaux won first place with a record of 17,253 miles. During the last two weeks of the contest he sold fifty-two refrigerators.

Second place went to G. P. Robinson, with Rex Cole, Inc., New York distributor. Mr. Robinson started the race by closing the largest single order ever received by the General Electric Co. The order was for refrigerator equipment for eleven apartment buildings in New York City. He had a mileage of 12,253 miles.

Frank Vernon, Jr., with the Home Equipment Co., dealer for Rex Cole, Inc., won third place with a mileage of 6,878. Fourth place went to Albert W. Mat-singer of Judson C. Burns, Inc., Philadelphia distributor, with 6,876 miles to his credit.

Other winners in the race were D. C. Fain, with Edmondson Refrigerating Corp., Houston distributor; E. Russell Truex, with Eastern Hardware & Supply Co., Atlantic City; Henry Siegrist, with Judson C. Burns, Inc., Philadelphia; C. S. Warner with General Engineering Co., Reading dealers for N. K. Orville, Inc.; Edward L. Glancy, with Baker Bros., Inc., Los Angeles dealers for the George Belsey Co.; and E. Dickinson, Tampa Electric Co., Tampa dealers for Electric Refrigeration Co.

TRADE  
EXTRA DRY ESOTOO

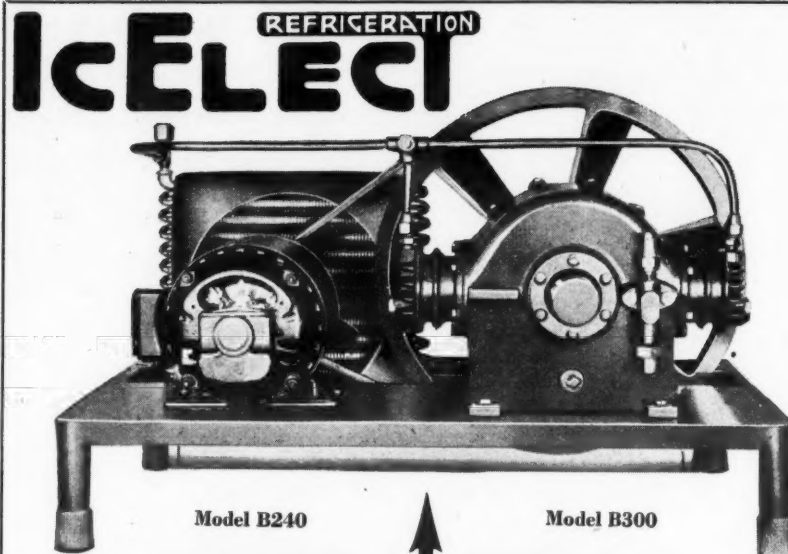
MARK  
THE PUREST

## SULPHUR DIOXIDE

Analysis Guaranteed

We have an agent, with our product in stock, near you  
Wire us where we can serve you

VIRGINIA SMELTING CO., WEST NORFOLK, VA.  
F. A. Eustis, Secretary 131 State St., BOSTON 2 Rector St., NEW YORK



Model B240

Model B300

PRESSURE OILING	NO CRANK SHAFT
NON-LEAK SHAFT SEAL	NO CONNECTING RODS
BUILT IN OIL PUMP	NO DELICATE VALVES
SILENT POPPET VALVES	NO PISTON SLAP
OPPOSED CYLINDERS	NO SEAL GRINDING

BUILT FOR REFRIGERATION

(Not a Scotts Yoke)

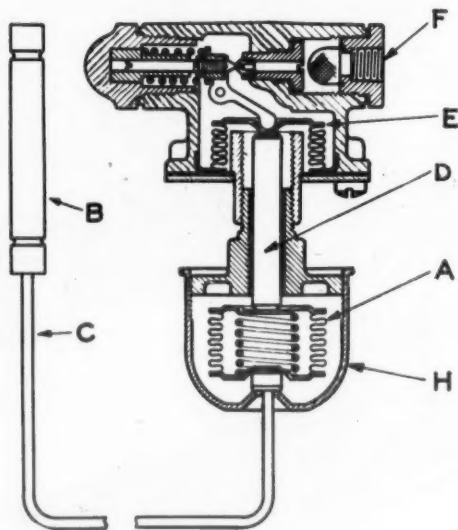
"built to serve without servicing"

IcELECT is a symbol of quality, a symbol of a faithful servant for domestic and commercial refrigeration. Good territories are open to manufacturers, distributors and large consumers. Send for our booklet "THE HEART" of REFRIGERATION."

**IcELECT CORPORATION**  
OMAHA, NEBRASKA

## ANNOUNCING American Thermostatic Expansion Valve

An Expansion Valve for Multiple Hook-Ups Using the Dry System

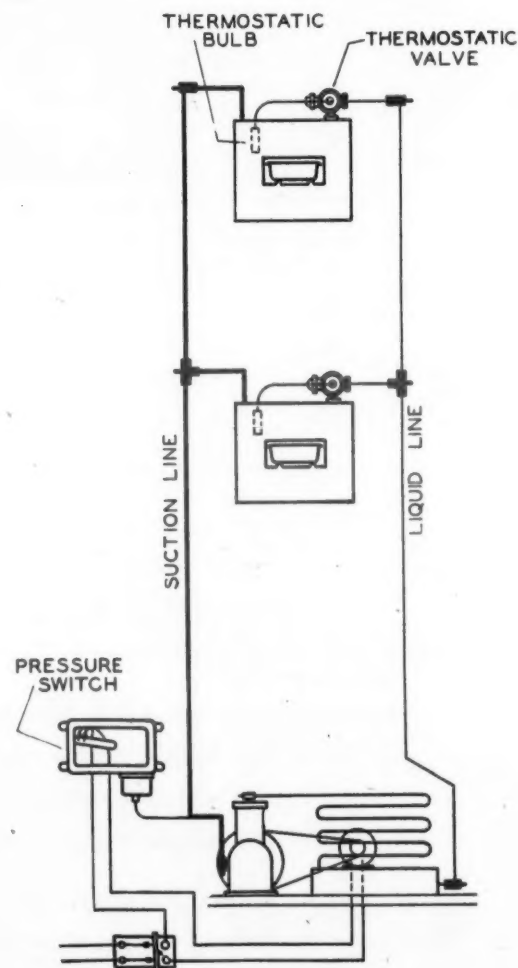


- A—Thermostatic power element.
- B—Thermostatic bulb.
- C—Flexible tube.
- D—Operating stem.
- E—Bellows seal.
- F—Liquid inlet.
- H—Housing and adjusting element.

The American Automatic Expansion Valve which is generally accepted by the Refrigeration Industry as the best expansion valve ever designed, is now available with a thermostatic element for use in multiple installations. The American Thermostatic Expansion Valve:

1. Gives a positive, trouble-proof control of multiple installation.
2. Reduces the amount of refrigerant in any system 50% to 75%.
3. Makes the compressor capacity the determining factor in the number of boxes that can be connected to a single machine, and not the receiver capacity.
4. Permits of adjustment on the job to take care of variable demands.
5. Eliminates placing a thermostat or thermostatic bulb in the box when used in connection with "self-contained units," and allows the use of a pressure-stat.

Send for detailed information. American Thermostatic Expansion Valves will be sent on ninety days consignment, free of charge, for experimental use.



## AMERICAN RADIATOR COMPANY

INDUSTRIAL DIVISION

816 South Michigan Avenue, Chicago

1423-25 Baltimore Avenue, Kansas City, Mo.

Factory—Detroit, Mich.

40 West 40th Street, New York

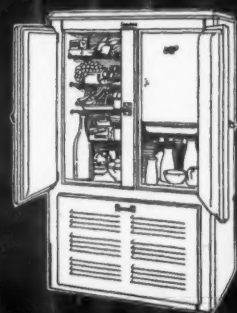
Quinby Building, Los Angeles



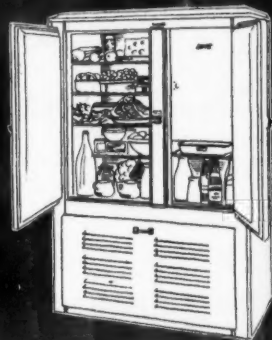
THIS PAGE ADVERTISEMENT APPEARED IN THE  
SATURDAY EVENING POST  
FEBRUARY 23rd, 1929



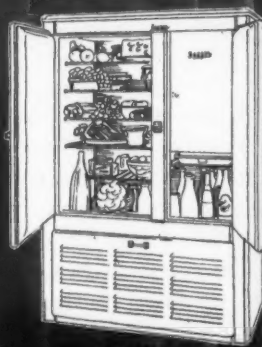
SENIOR P5-2



SENIOR P7



SENIOR P9



SENIOR P14



CABINETS BY  
*Seeger*  
SAINT PAUL

Modern in each and every detail—the New Cabinets by Seeger for Nineteen Twenty Nine—distinctively efficient and conveniently durable—their beauty the deliberate and decisive choice, from varied designs and types, by well qualified judges. Maximum perfect food preservation with minimum operating expenditure, an acknowledged Seeger Feature.

The Senior Line of Cabinets by Seeger of flawless porcelain exterior and interior, incomparable and unsurpassed, comprising all Seeger Traditional characteristics of quality—practical and decorative as well, the modern requisites.

The Junior Line of Cabinets by Seeger, a decided new type, either all porcelain, or lacquer exterior finish with porcelain interior. Beautifully efficient—a Modern Refrigeration Cabinet and at a popular price.

These Cabinets are made exclusively for Electrical, Gas or Mechanical Refrigeration, and are equipped with the unique Seeger Chiltray and can also be equipped with the novel and practical Fruit and Vegetable Storage Compartment.

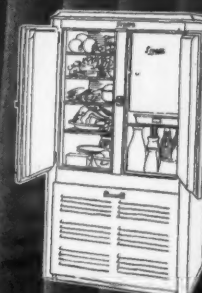
All Porcelain Cabinets by Seeger, may be obtained with exteriors of Cirrus Pastel Shades of Green, Gray or Old Ivory, or in any specified color or combination of colors, to order.

**SEEGER REFRIGERATOR COMPANY**  
SAINT PAUL - MINNESOTA

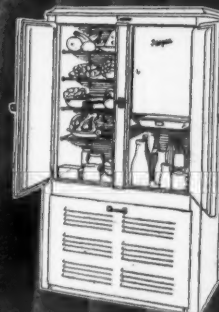
NEW YORK 389 Madison Ave. BOSTON 28-28 Providence St. CHICAGO 223 N. LaSalle St. ATLANTA 392-46 Spring St., N. W. LOS ANGELES 1340 E. Sixth St.



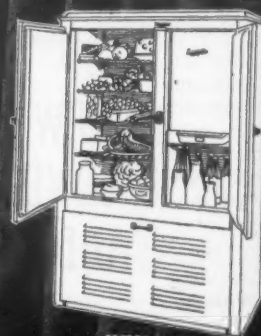
JUNIOR 5-1



JUNIOR 5-2



JUNIOR 7



JUNIOR 9



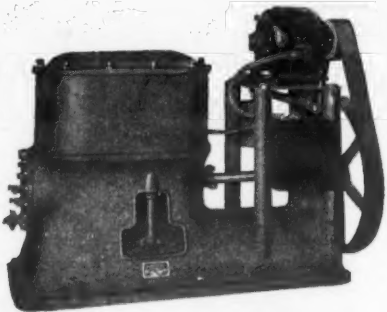
## NEW EQUIPMENT

### NEW PEERLESS UNITS SPECIALLY DESIGNED FOR MULTIPLE SYSTEM

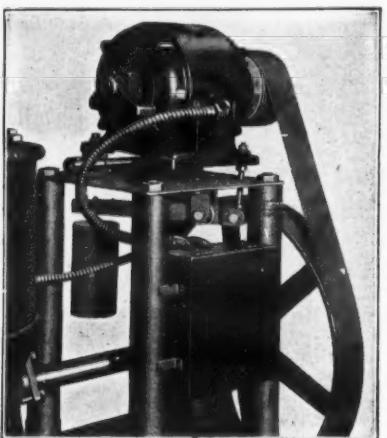
Can Operate 100 Cabinets on  
Central Plant and Comply  
With Code

THE Peerless Ice Machine Co., Chicago, Ill., has developed a number of improvements in connection with their central plant methyl chloride equipment. Particular emphasis has been directed toward perfecting the details of their one, three and five ton compressors, so that they might be used on large multiple installations, and meet with the requirements of the National Underwriters' Code in regard to amount of refrigerant used. Co-incidental with the development of these compressors, they have designed an evaporator which contains less than three-tenths of a pound of refrigerant. This unit is operated in flooded condition,—the liquid level being maintained by means of a ball float. It has sufficient surface to properly cool a ten cubic foot box.

Freezing time of ice is a special feature



Front View of the New Unit



Close-up of Motor Drive

of this unit. Less than ninety minutes is required to freeze solid cubes, the manufacturers claim. They announce that with their new equipment they are able to install one hundred refrigerators on one central plant and remain within the limits of the Underwriters' Code.

Another change has been made in the motor drive in connection with their compressors. As shown in illustration, the motor is mounted directly over the fly-wheel, yet no idler pulley is required to maintain the correct belt tension. By means of proper selection of lever arm centers, the belt pull itself provides the proper tension, regardless of shrinkage, stretch or wear of belt. A counter weight is provided which serves merely to balance the weight of the motor. The weight is not utilized to provide belt tension. This drive is said to be extreme-quiet in operation.

The Peerless cube ice maker is illustrated. With this unit, the building management can always comply with requests for ice cubes when special occasions arise which cause guests to demand more than the normal ice supply available in their own refrigerators. The cabinet is made in various sizes, with capacities ranging from five hundred to two thousand cubes.

### ELECTRO-KOLD REPORTS GAIN OF 300 PER CENT IN JANUARY SHIPMENTS

Shipments during the month of January, according to H. L. Masterson, general manager of the Electro-Kold Corp., Spokane, Wash., ran better than 300 per cent greater than those of January, 1928,

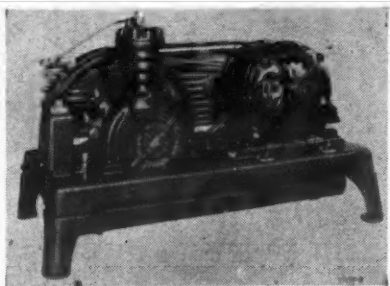
with more unfilled orders on hand at the beginning of February than at any corresponding period in our history.

"Our 1928 operations", he said "showed an increase of 75 per cent over 1927, with a satisfactory net profit as the result of the year's work. Last year Electro-Kold units were shipped to twenty-two of the states in this country and to eleven foreign countries.

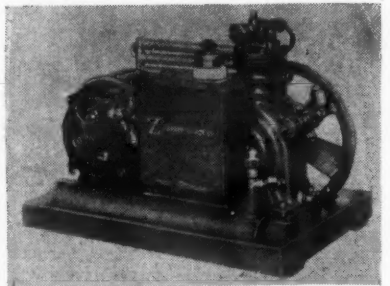
### ZEROZONE NOW HAS COMPLETE LINE OF CONDENSING UNITS

THE Iron Mountain Co., 939-1011 East 95th Street, Chicago, Ill., has enlarged its line so that at the present time Zerozone compressors from 1-6 to 1½ hp. are available, enabling dealers and distributors to supply practically any demand in either the domestic or light commercial field. The outstanding feature of the Zerozone line, according to the manufacturers, is its uniformity of design and construction as seen in the condensing units.

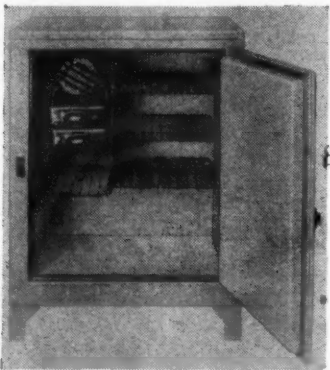
The model A compressor shown here was designed primarily to be used in conjunction with the model 49 cabinet to be sold as a complete self-contained unit,



Zerozone Model I, 1½ h.p. Unit



Zerozone Model A, 1/6 h.p. Unit



Zerozone Model LE-36 Cabinet

but it may be used in other refrigerators having capacities up to 8 cu. ft.

The Zerozone cabinet shown here was designed for small kitchenette apartments. This cabinet is of one piece steel construction.

### 3 NEW COMMERCIAL CONDENSING UNITS ADDED BY WELSBACH

WELSBACH CO., Gloucester, N. J., announces the addition of three new commercial condensing units to its line. These units known as models 28, 40 and 80 have ice melting equivalents for 24 hours in a 90 degree room of 291 lbs., 582 lbs., and 1275 lbs. respectively. Model 28 is powered by a 1-3 hp. motor, model 40 by a ¾ hp. motor and model 80 by a 1½ hp. motor.

The addition of these three models provides a line of commercial condensing units ranging in ice melting capacities under the conditions stated above, from 125 lbs. to 1275 lbs.

For use with these commercial condensing units Welsbach has the new "Super Freezer" cross fin cooling units announced recently.

A complete line of domestic refrigeration equipment, including self-contained and remote models as well as multiple installation equipment, is also manufactured by the Welsbach Co.

### SPECIAL PROCESS USED TO REPRODUCE NEW SALES LITERATURE

SPECIAL attention is directed to the collection of clippings from sales literature describing new lines of equipment, reproduced on pages 13, 14, 15 and 16. Owing to the reduction in size and the fact that reproduction was made directly from the folders (instead of original photographs), considerable detail is lost. The primary purpose of this feature is to give a general idea of the complete lines of compressors, cooling coils and cabinets offered by a number of manufacturers. The companies represented on pages 13 to 16 are as follows:

	Page
Servel, Inc., Evansville, Ind.	13
Welsbach Co., Gloucester City, N. J.	13
Norge Corp., 670 E. Woodbridge St., Detroit, Mich.	13
Kelvinator Corp., 14250 Plymouth Rd., Detroit, Mich.	14
Frigidaire Corp., Dayton, Ohio	14-15
Copeland Sales Co., 630 Lycaete Ave., Detroit, Mich.	15
Champion Electric Co., N. Paulina and Diversey Pky., Chicago, Ill.	16
Universal Cooler Corp., 1214 Eighteenth St., Detroit, Mich.	16
Holmes Products, Inc., 205 E. 42d St., New York, N. Y.	16
Rauf Mfg. Co. (Alpine), Bogota, N. J.	16
Bryant Electric Refrigerator Corp., New Milford, Pa.	16
Merchant & Evans Co., Washington and 21st St., Philadelphia, Pa.	16
Williams Oil-O-Matic Heating Corp., Bloomington, Ill.	16

# The EBCO

## ELECTRICAL COOLER FOUNTAIN



Automatic Stream Control regulation is now a standard on all "EBCO" Fountains.

It insures maximum drinking efficiency regardless of pressure fluctuation, without waste of water.

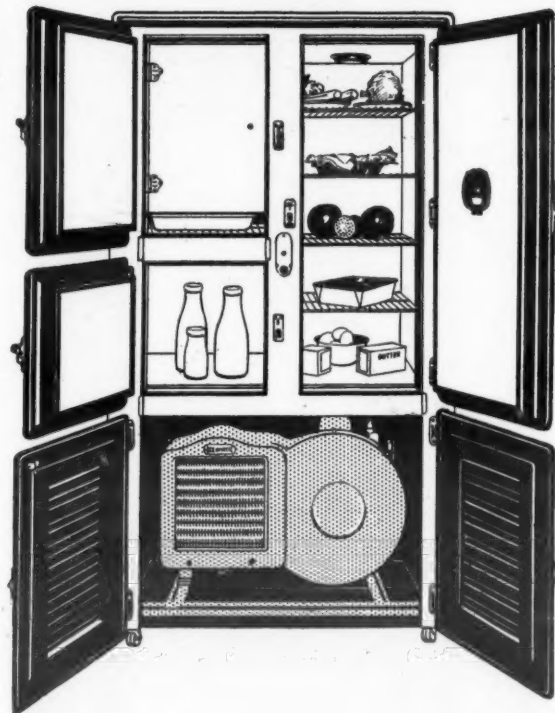
"EBCO" Water Cooler Models are especially adapted to electrical refrigeration. They combine all the sanitary features—mechanical sturdiness—design and finish for any type of installation.

There is an "EBCO" Fountain for every application.

QUALITY EFFICIENCY

**WRITE  
for  
Catalog**

# cold profits for WILLIAMS ICE-O-MATIC REFRIGERATION dealers



Be glad you've waited to make sure before taking on a line of electric refrigerators. NOW you can have Williams Ice-O-Matic—the most efficient home refrigerator. Williams Ice-O-Matic is beyond experiment—it means profits for you and satisfied owners.

Williams Ice-O-Matic employs the coldest known domestic refrigerant—Methyl chloride, a safe, odorless, colder refrigerant. Ice-O-Matic has twice the cooling capacity its cabinet sizes demand. Methyl chloride's "extra coldness" means less work for the cooling unit—longer life—less service.

**Eye-striking Beauty Helps Sales**  
New Crysteel cabinets will help you

sell Williams Ice-O-Matic. These handsome cabinets have "eye-appeal" that makes housewives want them. Interior dome light, enduring maple sills, chromium plated hardware—these and many other Ice-O-Matic features win instant approval from the housewife. Cabinet sizes vary to care for families of any size—every demand can be filled by Williams dealers.

Williams dealers benefit directly from Williams national advertising, helpful financing, sales and service schools, and a constant flow of sales-producing ideas. The Williams Ice-O-Matic franchise in your territory may be open—write or wire today.

**"Hit of the Air"—Williams Sync-O-Matics**

Two Nights Each Week. Tune in Tuesday on Station WGN and associated NBC stations at 10 o'clock Eastern Standard Time. Tune in Friday on WGN, Chicago, 8:30 Central Standard Time.

**WILLIAMS OIL-O-MATIC HEATING CORPORATION  
BLOOMINGTON, ILLINOIS**

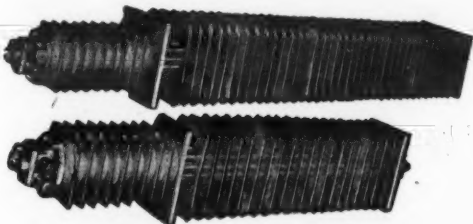




# A Complete Line of Quality Apparatus

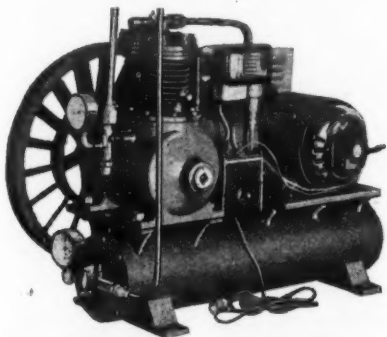
Standardized - Tested - and  
Adaptable To All Automatic  
Refrigeration Requirements

## REFRIGERATION ELECTRIC-AUTOMATIC



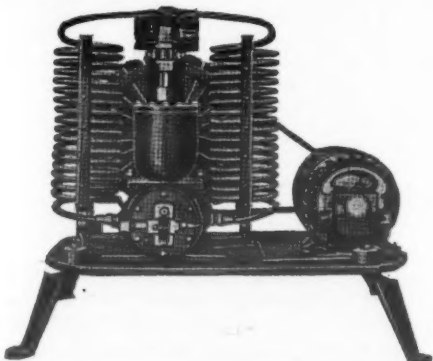
COMMERCIAL FIN FREEZER

"M & E" Commercial Freezers are made in all standard sizes in both the fin type or cast iron section for showcase work or for any kind of commercial use.



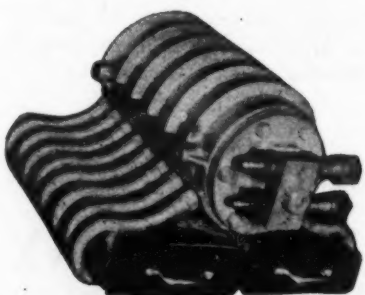
COMMERCIAL COMPRESSOR

"M & E" Commercial Compressors are made in five sizes covering 275 lbs. I. M. C. to 1100 lbs. I. M. C. They are of twin cylinder construction with the bore and speed varying according to capacities, and are used for all kinds of commercial or multiple hook-up installations.



DOMESTIC COMPRESSOR

The "M & E" Domestic Compressors are made in three sizes, single cylinder, from 75 lbs. I. M. C. to 175 lbs. I. M. C. They have a small bore and long stroke, belt driven, automatically self oiling and although ventilated in the cabinet are quite noiseless (no need for heat containing cover).



DOMESTIC FREEZER

The "M & E" Domestic Freezers are made in six sizes to fit into any make of cabinet up to 25 cubic ft. They freeze a large quantity of ice cubes in a very short time.

### To The Refrigeration Industry:

For 30 years we have been designing and making fine machinery. Our plant capacity is now 25,000 refrigeration units annually. Our line is complete and represents the highest modern standard in this art. Buyers of our products may be assured of lasting and responsible stability in designing and production.

*James Evans*  
Pres.  
Merchant & Evans Company.

## A Steady Record of Growth and an opportunity—

"M & E" prestige and usage has been climbing constantly and steadily since its introduction a few years ago. Today "M & E" apparatus is serving in a large number of the most notable installations in the eastern part of this country. Fine homes, large apartments, hospitals, clubs, modern chain and independent stores and refrigeration users of all types report economical and reliable service from "M & E" Standard Equipment. "M & E" dealers and distributors in a score of eastern cities are looking forward to a greatly increased and profitable 1929 season.

We are now prepared to negotiate with responsible dealers and distributors within 500 miles of Philadelphia for the opening of new territory. Inquiries are invited. Wire, phone or write for catalogues and full details.

## Merchant & Evans Company

MANUFACTURERS  
PHILADELPHIA, PA.

Plant: Lancaster, Pa.

Established 1866



The "M & E" domestic line is made up of 8 sizes of cabinets covering 5 to 20 cu. ft. Cabinets are of porcelain and lacquer (See-ger line included). Features of finish such as corkboard insulation, with double gasket doors, make the domestic line one of the finest in the field.



## Distributor News

### SALES OF R. COOPER, JR. SHOW UNUSUAL GROWTH IN CHICAGO TERRITORY

Opens New Downtown Salon for  
Architects and Builders

By L. E. Judd

LITTLE more than a year ago, R. Cooper, Jr., Inc., General Electric distributor, opened their first display floor in the Illinois Women's Athletic Club Build-

6,000 square feet in one of the largest skyscrapers in Chicago's financial district, the new State Bank Building, 120 S. La Salle. For eight years previous to his acquiring the General Electric distributorship, Mr. Cooper was Chicago distributor for Pacific Boilers (now a subsidiary of the U. S. Radiator Corp.), and it was his success in this connection that was a determining factor in the allocation of the General Electric distributorship for Chicago. The acquaintanceship of Mr. Cooper with architects, contractors and builders has been a big factor in the growth of his organization.

The eight branch stores of R. Cooper, Jr., Inc., are strategically located in differ-



R. J. Dallach,  
General Sales Manager



C. G. Rood,  
Vice-President



R. Cooper, Jr.,  
President

ing, 824 Tower Court, Chicago. At that time the entire organization consisted of R. Cooper, Jr., president; C. G. Rood, vice-president; R. J. Dallach, sales manager; and five salesmen. The business office occupied a very small space in the old Chamber of Commerce Building on West Washington.

The company now has eight branch stores, each with a personnel of from 10 to 20, over 100 live dealers in territory adjacent to Chicago, downtown refrigeration salon, and general offices covering

ent sections of Chicago, decorated in the modern mode, strongly featured in local advertising copy.

The downtown refrigeration salon, opened recently adjacent to the general offices on the tenth floor of the State Bank Building, is an added service to Chicago architects and builders.

R. Cooper, Jr., Inc., feel that the field of electric refrigeration has literally only been scratched—and that 1929 will see developments far exceeding anything yet accomplished.



Downtown refrigeration salon of R. Cooper, Jr., Inc., Chicago

### LOUISVILLE DISTRIBUTOR MOVES TO NEW LOCATION IN DOWN-TOWN DISTRICT

The A. H. Thompson Co., Louisville representatives of Frigidaire, have recently taken a \$100,000 ten-year lease on a building in the city's retail shopping district. The new location is 613 Fourth St. The show room will copy the company's new display room in Chicago, the decorations being futuristic in style. The company was formerly located on Guthrie street.

There are approximately 4,000 users of Frigidaire in Louisville at the present time, according to the Thompson company. Recent installations made include that of a new apartment building recently erected in Louisville. There are fifty-two refrigerators in the system, the size varying with the size of the apartment served. Forty model 9, eleven model 7 and one model 5 were used. Five model C Frigidaire compressors operate the fifty-two refrigerators.

The Y. M. C. A. has recently installed a water cooling system. It includes a Frigidaire model C compressor and ten model 4 coolers, one on each floor of the building.

The A. H. Thompson Co. is offering to install parts in machines bought before the improved noiseless model, which will make the former machines as noiseless as the newer models.

### New Million Dollar Hotel in Seattle Has Frigidaire

Frigidaire is used throughout the Benjamin Franklin Hotel recently opened in Seattle. The hotel is estimated to have cost a million dollars and is the second largest in Seattle.

### Walter G. Hoffman Gets Interest In Norge Company in Seattle

Walter G. Hoffman, of San Diego, Cal., has acquired an interest in the Norge Electric Refrigeration Co., Seattle, Wash., according to D. D. Yoder, president of the Seattle concern. Mr. Hoffman becomes vice president and general manager.

At present the firm is in temporary quarters while their former location is being remodeled. The remodeled display room at 524 Virginia St., will have large display windows on both sides and additional floor space will be had.

### December Sales Convince Lincoln Distributor Job Is Not Seasonal

With seventy-six Copeland units sold in December, E. F. Johnson, vice president and manager of the Woods-Copeland Co., Lincoln, Neb., disparages the idea of electric refrigeration being a seasonal project. Mr. Johnson is distributor for Copeland in Nebraska, western Iowa and a portion of Colorado. He thinks people listen more readily when not worried over the refrigeration problem.

### Seattle Firm Gives Credits as Prizes at Open House

Door prizes were given by the C. J. Dunlop Shop, recently appointed representatives of Frigidaire Corp. in Seattle, at an open house. All visitors were asked to register at the door and this gave them a chance to win one of the door prizes. Several \$20 credits were given as prizes, to apply toward the purchase of units.

### A. F. Eichenlaub Now Manager of Omaha Frigidaire Branch

A. F. Eichenlaub, formerly with Frigidaire in Columbus, Ohio, is now in charge of the Omaha branch of Frigidaire.

### W. S. Ounsworth Goes With Harloff-Loprich in Madison

W. S. Ounsworth, formerly with the Milwaukee Electric Railway and Light Co., joined the Harloff-Loprich Electric Co., Madison, Wis., March 1. Mr. Ounsworth will take charge of Kelvinator sales and dealer organization. Mr. Hoffman was refrigeration sales engineer in the Kelvinator division with the Milwaukee concern.

### Des Moines Lipman Distributor Takes Part in Trade Tour

The C. L. Percival Company, Des Moines, Iowa, distributors of the Lipman electric refrigerator, will be represented in the annual Iowa business promotion tour of fifty Iowa cities to be staged May 21 to 23. W. L. Percival will represent the company.

### Binder Electrical Supply Co. Are N. J. Copeland Distributors

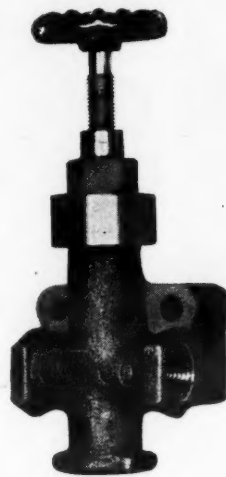
Binder Electrical Supply Co., 184-6 S. Broad St., Trenton, N. J., has recently been appointed distributor for Copeland Products, Inc. Central New Jersey and part of Pennsylvania will be in the territory.

### H. W. Summers Joins Consumers Power Co., Grand Rapids

H. W. Summers is now with the Consumers Power Co., Grand Rapids, Mich., as sales manager of the commercial refrigeration department. Mr. Summers was formerly with Dalrymple-Kelvinator Co., Detroit.

## THE CLIFFORD PACKLESS VALVE

PARTICULARLY DESIGNED FOR MULTIPLE ELECTRIC  
REFRIGERATING INSTALLATIONS AND TO MEET THE  
REQUIREMENTS OF THE NEW CODE



Made permanently  
leak - proof with  
"Hydron" Metallic  
Bellows. New design  
eliminates all possible  
torsional strains.

Bodies of highest  
grade brass forgings.

Easily attached to  
mounting board or  
wall, with ample  
clearance for turning  
operating handwheel.

No wrenches need-  
ed. A perfect de-  
frosting valve.

OVERALL LENGTH 5 INCHES; WIDTH 2 INCHES

DEALERS AND DISTRIBUTORS MAY ORDER  
DIRECT FROM THEIR MANUFACTURERS

## CLIFFORD MFG. CO.

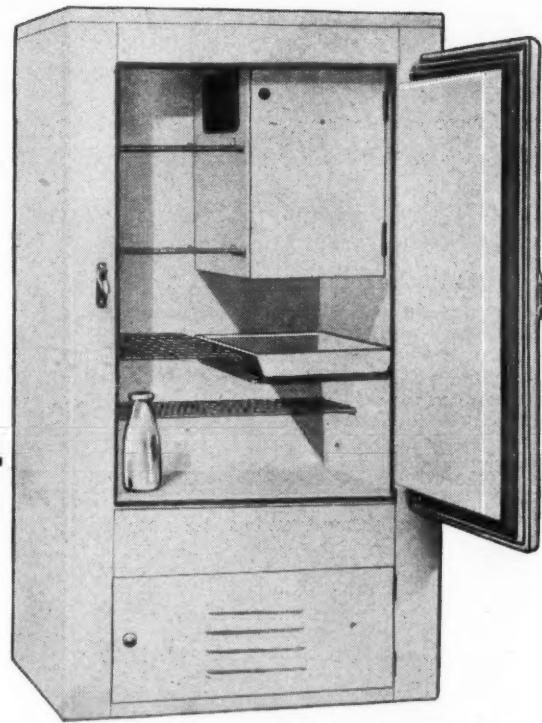
564 East First Street, Boston, Mass.

Factory Representative: F. B. Riley,  
320 Beaubien Street, Detroit, Mich.

## NINE SQUARE FEET OF STORAGE SPACE

### in this NEW AUTOMATIC Cabinet

With Net Food Storage  
Capacity of About  
Five Cubic Feet



[ Scientifically Insulated ]  
with Dry-Zero

These New Automatic Cabinets have all the qualities that thirty-eight years' experience can build into them—plus Dry-Zero—the most efficient commercial insulation in existence and the most permanently efficient.

Dry-Zero absorbs just half as much moisture from humid air as the next best material and only about one-eighth as much as some other insulating materials.

Dry-Zero will not rot, settle, crack, swell or disintegrate. Nor will it develop odors.

You can safely guarantee these facts and be sure of 15 to 20% increased performance over the best previous cabinets—by test.

You can see the thickness of this well-insulated

door, which is another safeguard against high operating and servicing costs. And the well-proportioned and conveniently-arranged interior—all offering you advantages in a popular size which has met with instant demand.

Besides the Medium Base Model as illustrated, you can also have the choice of High Base Styles ranging from 5 to 12½ cubic feet, in Porcelain or Steel.

Other Models, with or without base, specially designed in 21, 22, 24, 25, 26½, 30 and 36-inch widths completing a range of sizes to fit your every need.

Act quickly to get samples and to perfect arrangements for the deliveries you need, because we are rapidly contracting our entire output.

Write Today for Complete Information

ILLINOIS REFRIGERATOR COMPANY  
MORRISON, ILLINOIS

# AUTOMATIC

Refrigerator Cabinets for Electrical Refrigeration



# the unquestionable superiority of Dry-Zero brings Definite Sales Advantages



## Comparative Values-

established by U. S. Bureau of Standards, Armour Institute, State Universities and other impartial authorities.

Material	Wt. cu. ft.	Insulation Value	Absorption*
DRY-ZERO	2 lbs.	4.15 to 4.3	14
Corkboard	9.5 to 13 lbs.	2.9 to 3.3	28
Wood fibre board	13 lbs.	2.9 to 3.2	115
Flax fibre board	13 lbs.	3 to 3.2	
Cane fibre board	15 lbs.	2.7 to 2.9	78
Mineral wool slab	17 lbs.	2.6 to 2.8	

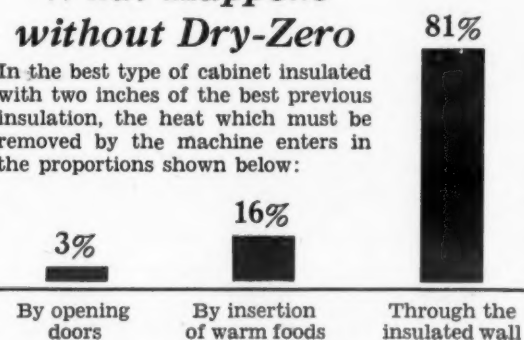
\*Test run by University of Minnesota.

*Reduces the Operating Time of Your Machine at Least 15 Per Cent . . . and . . . Eliminates All Troublesome Odors From Insulation . . .*

Think what a powerful weapon the unquestionable superiority of Dry-Zero places in your hands. . . 15% to 25% more efficient than any other insulant in common use. Think what this means in reduced operating costs . . . the fewer hours that the motor must run to maintain a safe and protective temperature. . . the reduction of the amount of electric current consumed. . . the lessened wear and tear on the operating unit and a corresponding reduction in service costs. It means that the Dry-Zero insulated unit sets an entirely new standard of efficiency.

## What Happens without Dry-Zero

In the best type of cabinet insulated with two inches of the best previous insulation, the heat which must be removed by the machine enters in the proportions shown below:



The permanent efficiency of Dry-Zero gives a new meaning to a guarantee of satisfactory service. As long as the unit is in operation . . . and much longer . . . Dry-Zero functions with undiminishing effectiveness. It is not subject to deterioration or rot. It is free from odor troubles. Dry-Zero in one test withstood 50,000 continuous door slams without loss of efficiency. Years of service in refrigerator cars . . . truck bodies . . . etc., have shown that Dry-Zero does not settle or "void" even under strenuous service. Dry-Zero protects the reputation of your unit by providing the lasting barrier to heat penetration.



Closely linked with the permanence of Dry-Zero's efficiency is its resistance to moisture . . . for absorption and retention of humidity are important causes of physical breakdown. Dry-Zero is not subject to rot . . . From the very nature of its fibres it resists fungic growth . . . and added to this is the unusual protection of the Dry-Zero moisture sealing flange. This resistance to moisture insures the utmost in sanitation . . . and freedom from odor troubles. Wouldn't such vital points as these lessen your sales problem? Wouldn't it give you an advantage over competition that is bringing the final choice of a refrigerator down to its actual performance. Insist on having Dry-Zero insulated cabinets—they cost no more . . . A list of Dry-Zero insulated cabinet manufacturers will be furnished on request.

This increased performance means not only saving in running time, wear and tear, servicing, etc., in your individual units . . . but it also means more multiple cabinets can be run off the same machine hook-up—AT NO INCREASE OF COST . . . And now one more point which applies particularly to yourself. Dry-Zero is the lightest insulant known. Each cabinet insulated with Dry-Zero weighs 30 to 75 lbs. less. This lightness of weight—in case you are paying transportation costs, means a saving of at times as high as a dollar a unit. Your resale price is established . . . and any saving such as this comes as your own profit. Think it over.



# DRY-ZERO CORPORATION

130 N. Wells St., Chicago, Ill.



# ELECTRIC REFRIGERATION NEWS

The Business Newspaper of the Refrigeration Industry

PUBLISHED EVERY TWO WEEKS BY

BUSINESS NEWS PUBLISHING CO.

550 Maccabees Building, Woodward Avenue and Putnam Street  
Detroit, Michigan. Telephones: Columbia 4243-4244

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MARCH 13, 1929

## Public Confidence

THE acceptance of many a labor-saving device has been retarded because of doubt as to the stability of the manufacturer. The prospect hesitates to purchase a product, however appealing, which may not be fully developed and free from fundamental defects in design. He wants to be assured of protection in the event that the device fails to perform as represented.

A considerable number of new appliances are invented by ingenious mechanics who, lacking capital, have great difficulty in realizing upon their opportunity to supply a new service to the public. Often the original output lacks refinements in design and the inevitable service costs soon eat up the profits. Many of the difficulties can be easily rectified by the touch of an experienced hand but the cost, in time and travel, of rendering service is always expensive. Furthermore, considerable production and merchandising experience are usually necessary before a new product takes on the finish in outward appearance that is necessary to meet market standards.

Electric refrigerators have gone through all the usual development stages. Years of intensive effort and untold money have been expended in bringing them to the present degree of perfection. It is now generally agreed that the customer is getting his money's worth and there is little reason to question the satisfactory performance of equipment. Much money has been lost in electric refrigeration, it is true, but the losses have been borne by the stockholders, the entrepreneurs of the industry, not by the purchasers. Fortunes have been expended for engineering development, for factory equipment, for advertising and sales promotion. All this expenditure has resulted in direct benefits to the public. Quantity production has permitted great reduction in retail prices. Wide-spread publicity has given the prospective buyer every opportunity to secure full information regarding the product.

No doubt the rapid rise in the popularity of electric refrigeration has been partly due to the fact that equipment is produced by large corporations, well known to the public and having an established reputation for keeping faith with the public. The fact that these companies are spending millions of dollars in advertising has tremendously strengthened public confidence in electric refrigeration service as well as stimulated the desire for immediate possession.

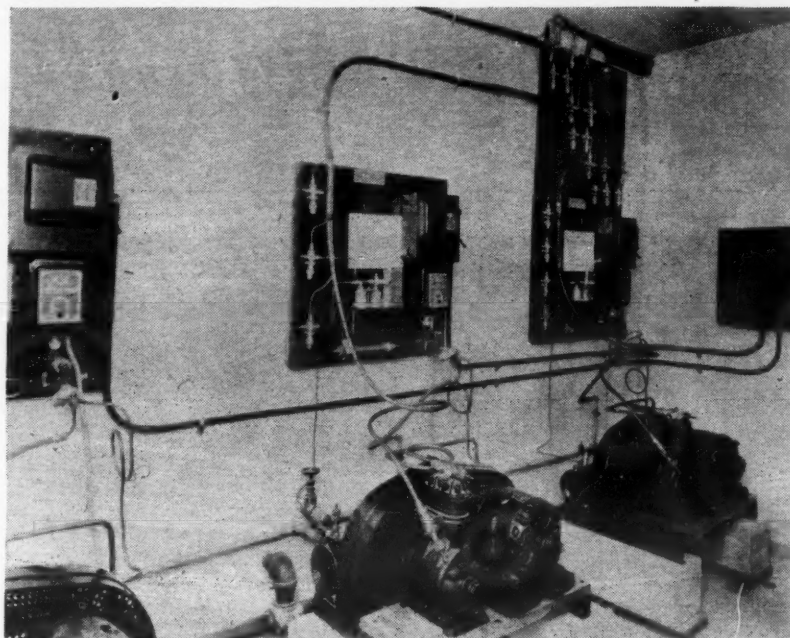
In addition the buyer has had the assurance which comes from public utility recommendation and endorsement. He may not know the manufacturer of the electric refrigerator offered, but he does know the local public utility company. His experience and that of his neighbors with the public utility provides a guide as to the reliability of their recommendations. He knows that the public utility company cannot get away, that it will not go broke or out of business.

Furthermore, he has the advantage of buying from an established local dealer whose business integrity may be determined by consultation with local bankers and other business men. Fortunately electric refrigeration dealerships, in general, have been established on a high plane. High grade business men with ample financial resources have been attracted to the business. Organizations of this character have made a good record of progress considering the comparatively short time they have been in operation. There is every reason to believe that good profits should be made in this field. Electric refrigeration is a high-grade type of business. The unit of sale is comparatively large. Sales are made to the better class of homes and to the more progressive merchants. This reduces the credit risk and the losses in doing business. Electric refrigeration is popular, customers secure great satisfaction from their purchases, the good-will factor is high and all these elements make for a sound business.

Refrigeration is a fundamental service like that of transportation and communication. It is needed wherever people live, work or congregate. No individual can live more than a few hours at a time without need of refrigeration service, in other words, without needing food or drink. The future of electric refrigeration is unquestionably of enormous proportions.

# MULTIPLE INSTALLATIONS

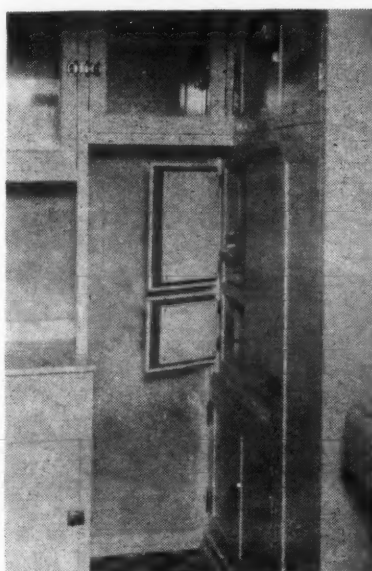
## 7 Machines Serve 93 Cabinets in St. Louis Apartment



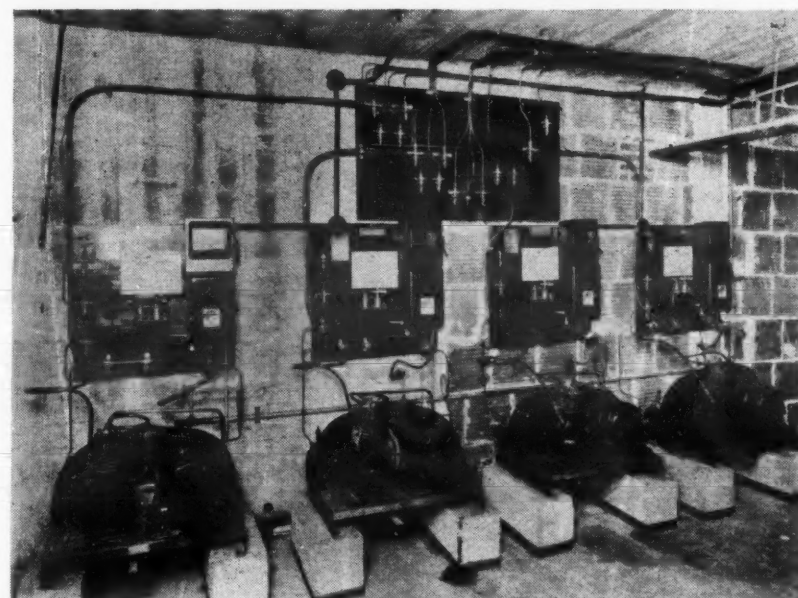
Eighth Floor Group of Three Model W. B. Kelvinator Compressors



Lindell Tower Apartments  
St. Louis, Mo.



Built-in Cabinet



Four Compressors Installed in the Basement

Kelvinator St. Louis, Inc., have just completed a 93 family apartment house job known as the Lindell Tower Apartments. The building is 15 stories high and represents one of the finest apartment houses in the city.

The equipment consisted of 3 Model W. B. condensing units and 1 Model W. L. B. condensing unit in the basement and three Model W. B. condensing units on the Eighth Floor, located in the ma-

chine room. 93 cabinets Model 36-P equipped with 93 No. 8 coils were installed in the apartments. The cabinets were built in (see picture) with a small cabinet constructed under same for kitchen utensils.

Upon the completing of this job a new contract has just been secured for the installing of Kelvinator equipment in a new 72 family apartment house now under construction. This building is

being erected by the Wm. Drazda Realty Co., Messrs. Cliff and William Drazda have purchased over 200 Kelvinator units from the Kelvinator St. Louis Inc. dealer, to date.

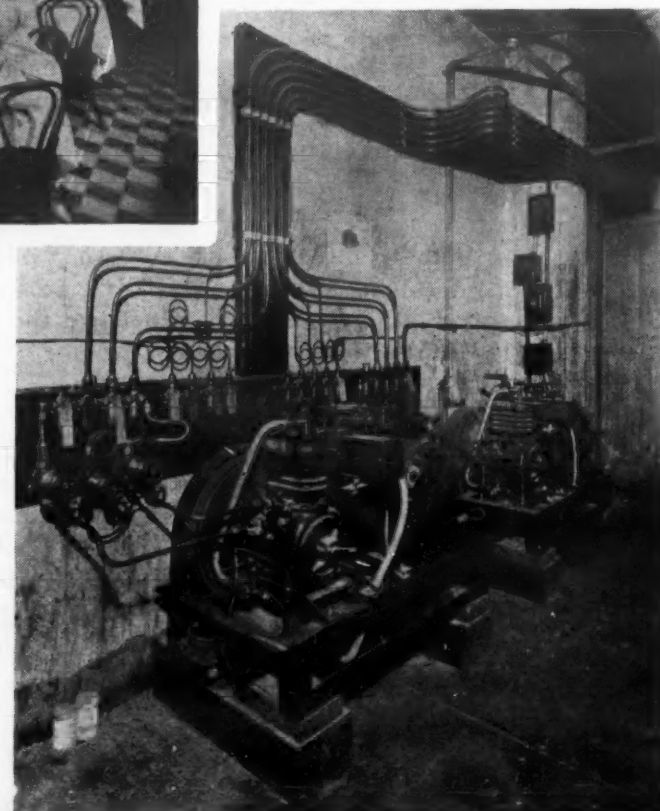
Kelvinator St. Louis have also closed an order for commercial equipment for the City of St. Louis, amounting to \$4,000.00. Said equipment is for the new Water Works Plant on Missouri River.



Above—Paul-Ernest Restaurant, Portland, Ore.

Right—Frigidaire Compressors in Basement.

## \$2500 Refrigerating System Installed in Restaurant at Portland, Oregon

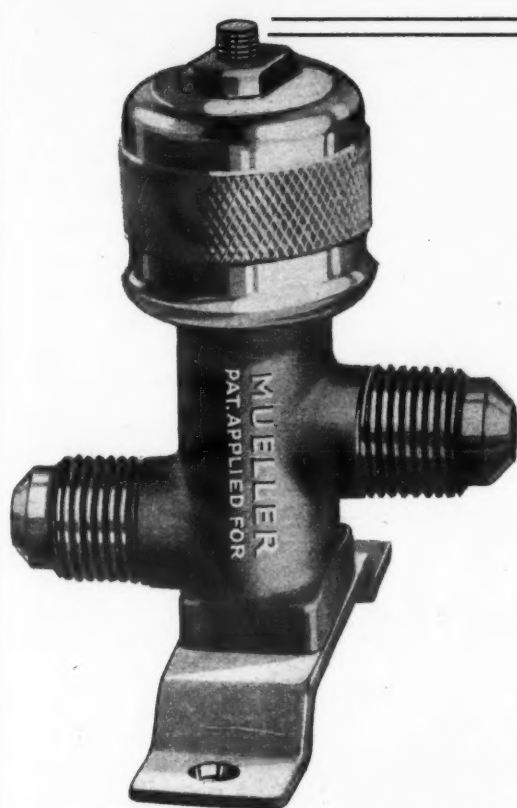


Refrigerating equipment valued at \$2,500 has been installed in the Paul-Ernest Restaurant in Portland, Ore., shown above. This installation included two large service boxes, each equipped with a 17F Frigidaire coil, a short service box with a 24F coil, an 18 ft. back bar with a 76F coil, an 8 ft. upper back bar with a 76F coil, two No. 4 water coolers, a 200-lb. ice maker, which makes eight 25 lb. pieces of ice in twelve hours and two h.p. Frigidaire compressors which are installed in the basement. The system is so arranged that it is possible to shut off any piece of the equipment independently of the others. Automatic regulating valves are used on all coils where a variation in temperature is needed.



# Mueller

## Forged Valves and Fittings for Electric Refrigeration

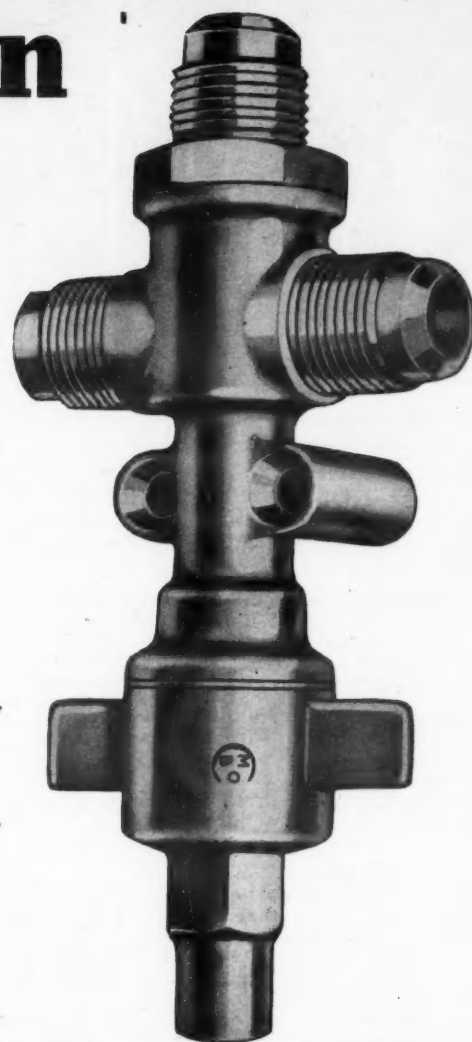


Open  
Closed

The Mueller Brass Co. makes a complete line of valves and fittings specially designed for Electric Refrigeration work. They are forged—being made under tremendous pressure, seepage is impossible.

The Mueller Brass Co. are pioneers in the manufacture of mechanical refrigerator parts and have supplied many electric refrigerator manufacturers since their first entry into this field.

Mueller products are being constantly improved whenever possible.



Mueller Standard 3-Way Electric Refrigerator Shut-off Valve With Wing Seal Cap

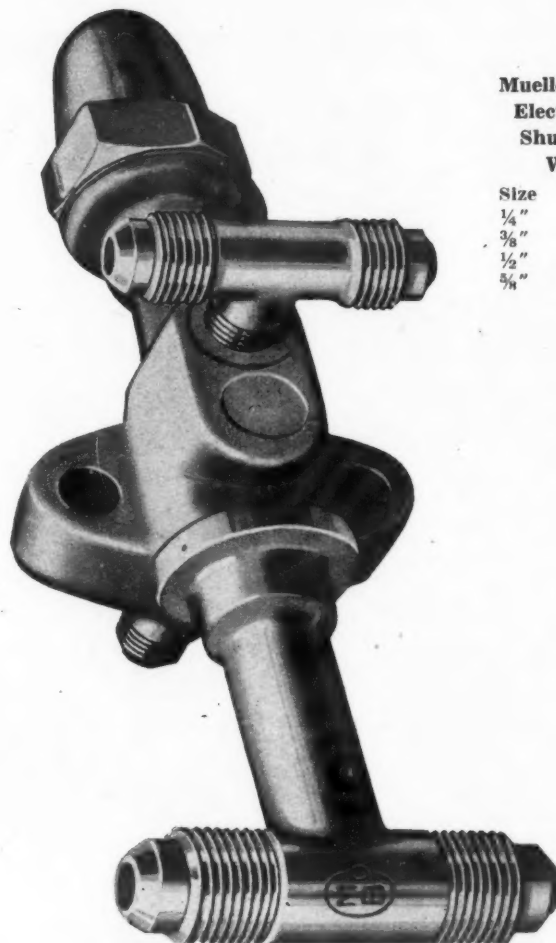
Size	Assembly No.
1/4"	A-11024
3/8"	A-11025
1/2"	A-11023
5/8"	A-11029

Mueller Standard Electric Refrigerator Packless Shut-off Valve

MADE IN THREE STYLES	
SHUT OFF (Illustrated)	Assembly No.
Size	
1/4"	A-11050
3/8"	A-11049
1/2"	A-11051

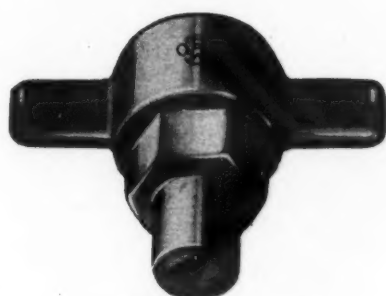
ANGLE	
Size	Assembly No.
1/4"	A-11059
3/8"	A-11058
1/2"	A-11056

3-WAY	
Size	Assembly No.
1/4"	A-11055
3/8"	A-11054
1/2"	A-11053



The above illustrates the flexibility of Mueller Shut-Off Valves. Some installations require unusual treatment which may be obtained by one of the varied applications of this valve. Mueller Refrigerator Valves or Fittings can be made to suit your special requirements. Send us samples or blue prints for quotation.

A glance at the stem indicates if valve is open or closed.  
Made with very rugged, compact construction; cannot be taken apart or damaged. Head is packed with vaseline to give permanent lubrication and prevent condensation at low temperature.

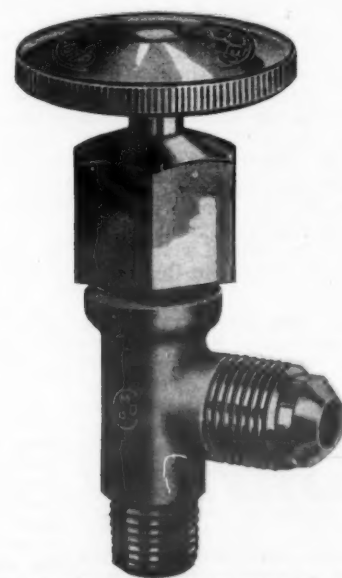


MUELLER STANDARD ELECTRIC REFRIGERATOR SHUT-OFF VALVE WING SEAL CAP



Assembly No. A-430  
MUELLER STANDARD ELECTRIC REFRIGERATOR VALVE HAND WHEEL

The underwriters' code specifies 3-Way Electric Refrigerator Valves shall be fitted with a hand wheel or other means of ready operation as an integral part thereof. The Mueller Standard Electric Refrigerator Wing Seal Cap with which this valve is fitted is designed to replace the present seal cap and also makes it possible to correct your present installation to come within the meaning of the underwriters' code specifications.



Mueller Standard Electric Refrigerator Flared Tube Side Outlet Shut-off Valve With Hand Wheel Indexed "Open" and "Close."

Size	Assembly No.
1/4"	A-11080
3/8"	A-11081
1/2"	A-11085

A complete line of fittings are carried in stock—always, for quick shipment.

Mueller fittings can be supplied to suit your special requirements.

Send us samples or blue prints for quotation.

## Mueller Brass Co.

PORT HURON, MICHIGAN

SALES OFFICES

BUFFALO, N. Y.  
Nenno Metals Co. 414 Jackson Bldg.  
CHICAGO, ILLINOIS  
Steel Sales Corp. 129 So. Jefferson St.  
CLEVELAND, OHIO  
The Hughes-Limbach Co. 118 St. Clair Ave. E.  
DAYTON, OHIO  
Mueller Brass Co. 620 Harries Bldg.  
DETROIT, MICHIGAN  
Hunter & Wilkie 428 Curtis Bldg.  
W. Grand Blvd. at Hamilton

FLINT, MICHIGAN  
Geo. A. Reamer 20 Dort Bldg.  
INDIANAPOLIS, INDIANA  
The A. B. Alexander Co. 801 Fidelity Trust Bldg.  
KANSAS CITY, MISSOURI  
Steel Sales Corp. Hotel Statler  
LOS ANGELES, CALIFORNIA  
Norman S. Wright & Co. 923 East Third St.  
MELBOURNE, AUSTRALIA  
Howard Hudson 380 Bourke St., Box 674E  
MILWAUKEE, WISCONSIN  
Steel Sales Corp. 490 Broadway  
MINNEAPOLIS, MINNESOTA  
Steel Sales Corp. 525 So. Seventh St.

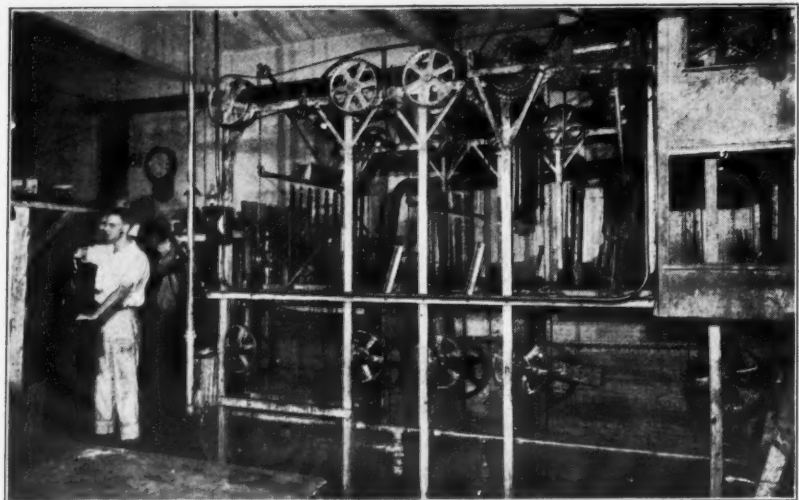
NEW YORK, N. Y.  
Mueller Brass Co. Room 512-E, 30 Church St.  
PHILADELPHIA, PENNSYLVANIA  
H. L. Hess Co. 2106 W. Atlantic St.  
N. S. PITTSBURGH, PENNSYLVANIA  
Wm. M. Orr Company 1411 Brighton Road  
SAN FRANCISCO, CALIFORNIA  
Norman S. Wright & Co. 41 Spear Street  
SEATTLE, WASHINGTON  
Norman S. Wright & Co. 608 Pioneer Bldg.  
ST. LOUIS, MISSOURI  
Steel Sales Corp. 4030 Chateau Ave.  
SYDNEY, AUSTRALIA  
Howard Hudson 352 Kent St.



## World's Largest Film Developers Use Kelvinator to Maintain Exact Temperatures in Solutions

5,000 Rolls of Film Developed Daily in Plant of Fox Co., San Antonio

By B. C. Reber



Film developing apparatus in plant of the Fox Company, San Antonio, Texas

AMONG the unique and unusual uses to which electric refrigeration has been applied is that in the plant of The Fox Co., San Antonio, Texas, where a Kelvinator system, designed for cooling ice cream, has been installed for cooling the water in which films are developed.

The Fox Co. is the largest company in the world developing and printing camera and kodak films. The rolls are sent in from all parts of the world, and approximately 5,000 rolls of film are developed in the tanks each day.

The natural condition of the films when they are unwrapped from their protecting paper, together with the chemical action that is set up in the water, increases the heat in the tanks and make some system of cooling necessary.

Previous to the time the Kelvinator system was installed, approximately 1,500 pounds of ice were used for this work, entailing a heavy expense and giving an unsatisfactory result. The inconvenience created by bringing in the ice, the storage, and the ultimate cost were all against this arrangement, and the offer of a new system doing away with this inconvenience, and at a lower cost, was warmly welcomed.

During a day's operation, the Kelvinator is operated approximately six hours by a 1 hp. motor consuming 1,000 watts per hour.

The cooling is done by means of pipe racks suspended in the ends of the tanks to be cooled, and the solution is pumped through these pipes, thus cooling the liquids. There are two of these racks, the first being suspended in the developing tank, and the second in a tank filled with water for rinsing after the films have passed through a "fixing" bath, or what is known as "Hypo No. 2."

With the Kelvinator equipment, it has been possible to keep the temperature of the water within very fine limits without any attention or trouble whatsoever, thus assuring better results in the developing.

When ice was used, constant feeding of blocks into the water was necessary with a resultant lowering of temperature for one minute and a raising of the temperature the next. At the present time the temperature of the developer is kept between 65 and 68 degrees, while the water is slightly lower. The cost of the ice used ran up to a large amount each month, despite attractive rates for such bulk; and the cost of operating the Kelvinator is almost negligible when the amount of work executed is taken into consideration.

"The installation of electric refrigeration in our developing room was one of the most progressive moves we have made since we have been in business," E. L. Studer, in charge of this work, stated. "Heretofore," he continued, "we had to see that we had plenty of ice on hand, that it was delivered on time, that the ice was fed in so the water would not get too cold, nor too hot, and a thousand other little details which required constant supervision in addition to the actual developing."

"With the present equipment we can forget all these worries. The developer and the rinsing water are kept at temperatures that we wish. If we find that the variation should be changed a little, we can have an adjustment made which will give us just what we desire within a few moments. During the winter months we can operate on a lower temperature, while during the summer, we have to change to meet climatic conditions."

"At the present time we have had this equipment in operation for nearly a year, and during this time we have had practically no repairs, the few we have had being on account of carelessness on the part of one or two of our employees who

did not understand the machine. We are very well satisfied with electric refrigeration in this work and plan to install other units as fast as our business demands."

"It is also worth mentioning that, in addition to cooling the developer and the rinsing water, we are able to cool the water in one drinking fountain located near this room."

## POPULARITY OF ICE CREAM IN ENGLAND INCREASING, REPORT

POPULARIZING ice cream in Great Britain has been a slow process but in the opinion of Trade Commissioner Brice M. Mace reporting to the Commerce Department the limit of British consumption of that delicacy has by no means been reached. In an analysis of the United Kingdom as a market for American dairy equipment just issued by the Commerce Department, Mace points out that 95 per cent of the ice cream equipment used in that country is estimated to be of American origin. The expansion of the British industry therefore is likely to be reflected in the exports of American ice cream making machinery.

The cool climate is the chief handicap to increased use of ice cream in Great Britain, the public still regarding it as a warm-weather delicacy. This factor will, of course, diminish in importance when the British public comes to regard ice cream as an all-year-round food and desert.

Another factor hampering the sale of ice cream is the fact that large numbers of small ice cream makers produce what is considered a very inferior article. An association of the larger manufacturers has been trying to get the government to set a legal standard for the quality of ice cream. It is only a matter of time, the report states, when a standard will be established and the makers of wholesome ice cream protected from the competition of inferior grades.

Only a few British manufacturers of ice cream sell under their own brands as in the United States. The largest manufacturer in the country, however, the Lyons company, is an outstanding exception. This company, which owns and operates about four hundred shops and restaurants, has induced retailers to sell ice cream under the company's brand. In order to bring this about cabinets have been supplied to the retailers and the brand extensively advertised. Some manufacturers who sell direct to the retailers have adopted a unique method of distribution, operating fleets of tricycles equipped to permit street vending and house-to-house canvassing. One manufacturer alone is said to operate nearly 1,200 of these tricycles.

As in the United States, the soda fountain trade in Great Britain provides an important outlet for ice cream. However, there is much room for improvement in the service from these fountains. The ice cream served as a rule is considered too soft, resulting from the fact that British ice cream makers experience difficulty in securing adequate supplies of cream and are compelled to use more butter and milk powder than American manufacturers.

## CANNOT SAY ENOUGH ABOUT THE NEWS

"I want to say that you are to be complimented upon the way you are editing ELECTRIC REFRIGERATION NEWS. To me there is no other publication of any kind, whether it be in our field or in other lines, that covers the point so well. I cannot say enough about ELECTRIC REFRIGERATION NEWS—it is helpful in every respect and no distributor, dealer, salesman or service man should be without it."

It is as important to them as anything can be. I am positive that you will be able to add several thousand new subscriptions to your large circulation list this year. If I may be of any assistance at any time, kindly do not hesitate to command me."—A. W. Lowden, Copeland Refrigeration Co. of New York.

## Perfection Stove Company Appointments

Donald M. Vance, formerly production manager of the advertising department of the Perfection Stove Company, Cleveland, manufacturers of the Superflex refrigerator, has been appointed manager of the oil-burner division of the advertising department of that company. R. E. Van Norstrand, formerly Chicago sales manager of the Quiet-May Oil Burner Corporation, has been appointed sales manager of the Perfection oil-burner division.

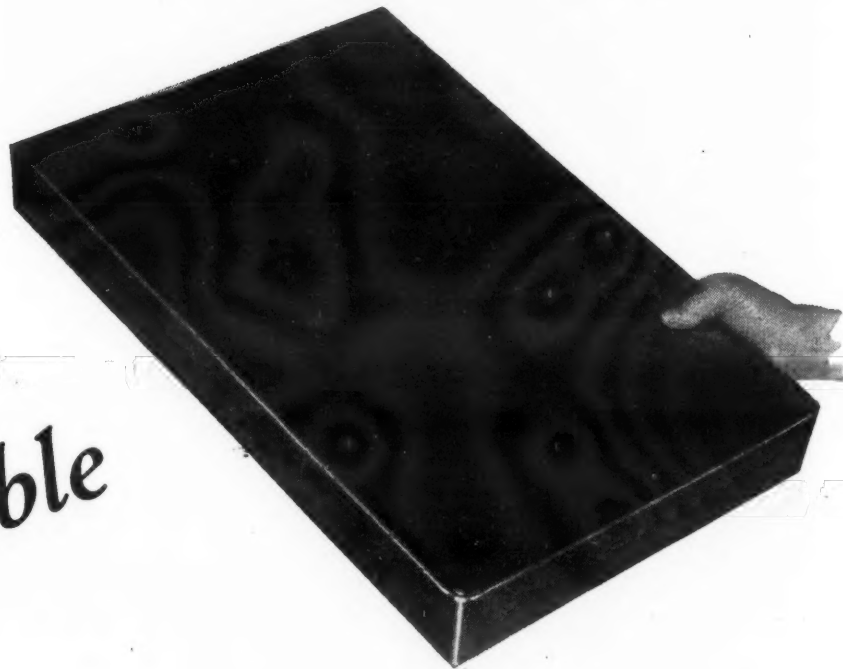
"Enclosed you will find check for your paper. I find it very interesting and helpful and am only too anxious to be one of your subscribers."—Chas. J. Nagle, Nagle's Sheet Metal Works, Herkimer, N. Y.

**PROFITS FOR DEALERS**

are certain with the fast selling "Airtite" line. New models, new features, colors. A complete line of cabinets built for any standard mechanical unit. Send for booklet number 18 "Cabinet by Rhinelander" and complete information for dealers.

**RHINELANDER REFRIGERATOR CO.**  
Rhinelander, Wisconsin

## Balsam-Wool Sealed Slabs



*Now available*

for REFRIGERATOR INSULATION

NOW Balsam-Wool is made in a form that is ideal for all domestic refrigerator insulation.

These sealed, waterproof slabs made in any specified size are quickly put in place and can be sealed to the cabinet frame. They combine the desirable features of both rigid and flexible insulants.

Balsam-Wool Sealed Slabs are flexible enough for quick installation, yet provide a unit of sufficient rigidity to

allow easy handling and sealing to the frame members.

Never before was such inexpensive, efficient, easily installed insulation available for refrigerators.

## FREE SAMPLE

Send for a sample Balsam-Wool Sealed Slab. Then consult with our engineers who will aid you in working out the economical production of a more efficient refrigerator.

## WOOD CONVERSION COMPANY

Insulation Division of Weyerhaeuser Forest Products

Mills at Cloquet, Minnesota

Industrial Sales Offices: 360 N. Michigan Avenue, Chicago

101 Park Ave., New York

938 National Press Bldg., Washington, D. C.

3084 West Grand Blvd., Detroit, Michigan

Manufacturers of Balsam-Wool Insulation for Domestic Refrigerators, Motor Buses and Airplanes; Balsam-Wool Refrigerator Car Insulation and Steel Car Insulation; Balsam-Wool Standard Building Insulation.



## Group Demonstrations to Church Organizations Average Three Sales Each for Norfolk, Va., Dealer

By Archie Richardson

WHEN R. F. Trant, of Norfolk, Virginia, was busy electrifying the farms of his section, he learned that while a farm lighting plant was something the man always bought, it was really the wife and daughters who had to be sold before the signature on the dotted line could be obtained from the man of the house.

And when the electric refrigerator came, Mr. Trant realized at once that if he were to put it over, he would have to appeal to the woman's tastes more strongly than ever. The refrigerator, he realized, was in the province of the housewife. It would be necessary to explain the financial side to the man, how the first cost was a good investment since the savings on ice would in time pay it back and yield dividends, but before he could be interested the wife must be led to want it enough to keep after her husband until he bought it.

Many plans of making the women of his territory want electric refrigerators were tried with varying success, but it was his method of handling group demonstrations that put over his product in his city and territory.

The plan found most successful has been that used by so many others, the bringing to the store of the women of church organizations and demonstrating to them in the most effective way the merits of the machine.

But before Mr. Trant makes an organization an offer of \$10 for its presence at a demonstration and an additional \$10 for each sale made as a result, he makes sure that there will be in attendance a sizeable group of women who are able to buy his machines. Given a good audience, a trained demonstrator seeks to make every woman present want an electric so much that she will be willing to make the necessary sacrifice to get it, and then the women who attended are followed up as intensively as circumstances will permit.

### Organization Receives \$40 for Co-Operation

It is estimated that an average of three sales for each demonstration is made within thirty days. The organization that co-operated in staging the demonstration gets \$40 in cash for its aid, but considering the ease with which the sales are made and the cumulative benefit of the demonstration the cost of this aid is regarded as small.

Before a demonstration is completed, about ninety per cent express a desire to own one of the machines. That means that in the various demonstrations held during the last three years some nine thousand women, nearly all of whom are willing to buy, have told Mr. Trant or his assistants that they want or hope some time to own electric refrigerators. Many of these have given detailed information about their plans and finances, all of which is recorded in the prospect file and which is helping make sales every day.

The average attendance at these demonstrations is about fifty; the organization of which they are members gets \$10 for its treasury, which means that it costs about twenty cents to bring a woman to the store for the demonstration. Leaving out the three sales that are made within thirty days following the average demonstration, the Trant organization, by this plan, makes picked prospects come to the store and learn all about their product and then makes them say they want electric refrigerators for their homes, all at a cost of little more than twenty cents each; remarkably inexpensive advertising, they believe.

"A usual demonstration," said James S. FitzGerald, supervisor of educational work, "includes a brief talk, covering in a non-technical way that will be understood by all the subjects of food preservation, why and under what conditions food spoils, the difference between electric and ice refrigeration and relative merits, and the like. All are encouraged to ask questions, and those of the group who own electric are often asked to answer these questions. The owners present, by the way, are always boosters and what they have to say often does more to sell the others on electric refrigeration than anything a man could say. After the lecture, the several sizes and types of machines on display are shown, and refreshments are served from one of the refrigerators on the floor.

"The purpose of these demonstrations is to create a desire to own one of our refrigerators rather than to make immediate sales. Good results have been obtained, and we expect to continue to make sales as a result of these demonstrations for a long time to come. They get women to think about their refrigeration problems and to talking about the merits of electric refrigeration, all of which is the best sort of advertising."

### J. L. Williams Joins Leonard Division of Kelvinator Corp.

J. L. Williams has resigned his position as industrial engineer with the Gibson Refrigerator Co., Greenville, Mich., to become standards engineer for the Leonard division of the Kelvinator Corp., at Grand Rapids, Mich.

## BANANAS SHOULD NOT BE KEPT IN REFRIGERATOR

Bananas should never be kept in a refrigerator, according to F. W. Kastner, advertising manager of the Fruit Dispatch Co., New York, N. Y. Bananas are more susceptible to cold than practically any other fruit. Before ripening, the process is retarded and after ripening, the flavor of the banana is changed by a temperature as low as in the average refrigerator.

Because of this the Fruit Dispatch Co. has requested that bananas should not be used in connection with display and advertising of refrigerators, and have advised they should not be kept in the home refrigerator.

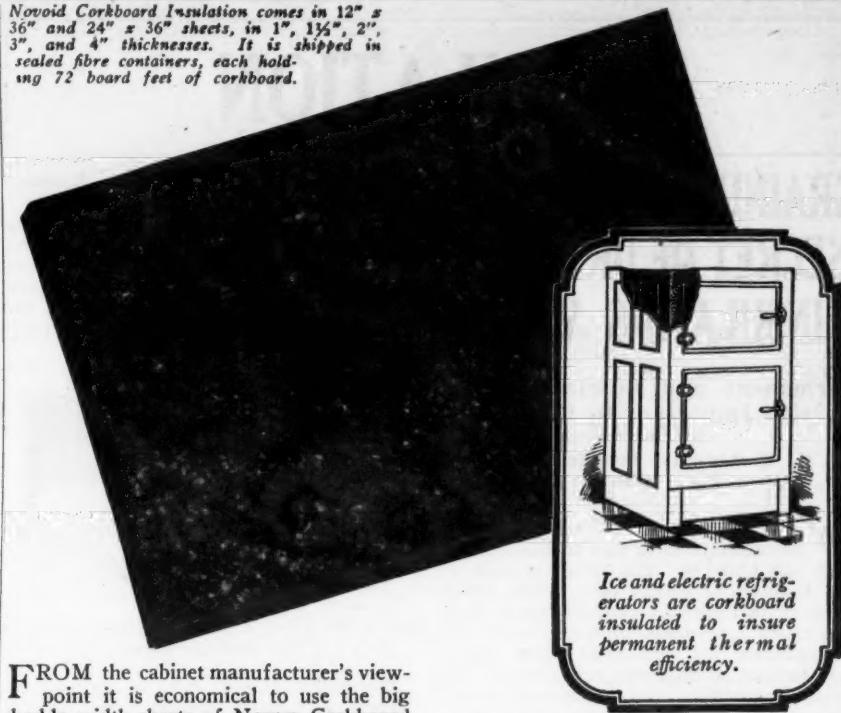
## E. G. BIECHLER HEADS TRUSTEES OF DAYTON HOSPITAL

E. G. Biechler, president and general manager of Frigidaire Corp., Dayton, Ohio, was elected president of the board of trustees of the Miami Valley hospital on March 6.

In 1925 Mr. Biechler headed the Community Chest campaign in Dayton. During this campaign the quota which was to be secured in one week was oversubscribed in three and one-half days, a record which still stands.

The average kilowatt-hour of electricity used by the 19,000,000 domestic customers in the United States was 473 in 1928. In 1925 the average was 447. Under special conditions in one of two utility properties, individual domestic customers use more than 1,500 kilowatt-hours and services are available that, if used, would increase the national average to upward of 3,500 kilowatt-hours per customer.—*Electrical World*.

Novoid Corkboard Insulation comes in 12" x 36" and 24" x 36" sheets, in 1", 1½", 2", 3", and 4" thicknesses. It is shipped in sealed fibre containers, each holding 72 board feet of corkboard.



Ice and electric refrigerators are corkboard insulated to insure permanent thermal efficiency.

FROM the cabinet manufacturer's viewpoint it is economical to use the big double width sheets of Novoid Corkboard Insulation. They are 24" x 36" in size and are available in 1", 1½", 2", 3", and 4" thicknesses. Figure the time saved in cutting and joining sheets. Added to that, they are light and easy to handle. They can be sawed and nailed like lumber. The edges of every sheet are clean and straight, they do not crumble in handling.

Novoid Corkboard Insulation resists moisture as well as the transmission of heat. Its higher insulating value makes it particularly suitable for cabinet and refrigerator construction. On request we shall be glad to send you a copy of Bulletin 280-E and a sample of Novoid Corkboard Insulation.

## Novoid Corkboard Insulation

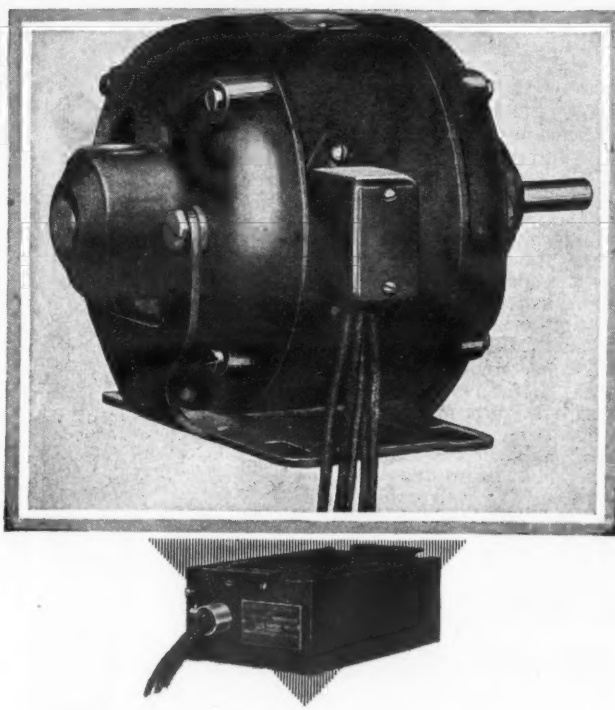
CORK IMPORT CORPORATION

345 W. 40TH ST. NEW YORK

"Permanent Protection for All Refrigeration"

ATLANTA BOSTON BUFFALO CHARLOTTE CHICAGO HARTFORD PHILADELPHIA ST. LOUIS TROY

# G-E Capacitor-Motor TYPE RKS



## The ideal motor for your refrigerator

HERE is a motor fit for the best refrigeration unit ever made—residential or commercial. It incorporates every feature you want in a refrigerator drive.

There are no brushes, commutators, or collectors to interfere with radio reception. With few moving parts, strongly constructed, maintenance

is minimized. This capacitor-motor is quiet almost beyond belief, and its very simplicity makes it a reliable, efficient drive. It improves power-factor—a feature that will recommend it to power companies.

Check these characteristics against your most rigid requirements and you'll find that this is the ideal refrigerator motor.



Manufacturers and dealers—This capacitor-motor will not only add prestige to your product, but will give you the benefit of the widespread service facilities of the General Electric organization.

# GENERAL ELECTRIC

GENERAL ELECTRIC COMPANY, SCHENECTADY, N. Y., SALES OFFICES IN PRINCIPAL CITIES



## INSULATION

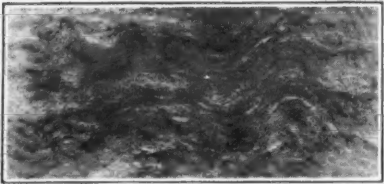
### GRAINING METHOD IS SECRET OF DRY-ZERO INSULATING VALUE

Permanent and Efficient Insulation Important to Dealers

By H. B. Lindsay, President Dry-Zero Corp., Chicago

**D**RY-ZERO is an insulating material manufactured in two forms—pliable slab and blanket. The latter is used by the millions of square feet in the better class of refrigerator railroad cars, truck bodies, etc., wherever high efficiency and permanence are required. The pliable slab is used in domestic refrigerators, ice cream cabinets, show counters, boxes, etc.—again where efficiency and permanence are required. Incidentally, the U. S. Bureau of Standards has recently discovered that Dry-Zero airplane blanket has a high sound absorbing value.

All forms of Dry-Zero are essentially composed of the uniform, grained, semi-



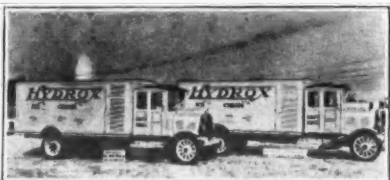
The "Grained," Semi-Felted Dry-Zero Batt.

felted batt of Ceiba fibre. Its efficiency and permanence of that efficiency are dependent upon that "graining," which will be explained later.

Ceiba fibre grows in the seed pods of the tropical tree of that family. These pods vary from 3 to 12 inches in length. The fibre is partly attached to the seeds and partly to the placenta, and nature makes it serve two purposes: to protect the forming seeds, which are excessively delicate, from sudden changes from blazing sun to the chill of tropical storms; and to carry the seeds when ripe, even through the tropical rain, so as to disseminate the species. For these reasons nature has made this fibre very averse to moisture and rot (except by the earth alkalies), a wonderful insulant, permanently resilient, and extremely light. It is ivory in color.

The pods are collected just before breaking open from ripeness. The fibre is abstracted and thoroughly sun-cured, baled and shipped.

Ceiba trees grow plentifully throughout the tropic zone, and there are several varieties. The total export of these fibres from one tropical country alone for cushioning, life jackets and other uses, runs from 16,000,000 to 20,000,000 pounds annually.



Heinig "Honor-Built" Bodies—Dry-Zero Insulated and Frigidaire Refrigerated.

For Dry-Zero we select and use only the more perfect varieties—minute, beautifully smooth closed tubes; every shipment of our own material has to pass the ordeal of the microscope.

Some years ago—ten to be exact—the writer first used this fibre for insulation, indeed secured U. S. Patent No. 1,468,642 and foreign patents on such insulation. After a very few years it was found, however, that disaster attends the loose fibre stuffed in as insulation. Not only is it utterly impossible in that way to attain the minute uniformity so vital in a good insulant, but in addition, when not grained and felted, the fibre

"balls," opening fatal air channels through the heterogeneous mass.

Three years were spent in discovering how to straighten the curly fibres, lay them across the intended line of heat flow and in that condition felt them. The result of this discovery was the grained, felted permanent batt of Dry-Zero insulation.



Dry-Zero Pliable Slab Made Especially for Refrigerators.

Dry-Zero pliable slab is covered on both sides with silicated light muslin, and is adhered to its own hermetic sealing sheet. This sheet extends beyond the slab on all sides and carries on its under side a hermetic pressure sealing compound—this is a patented feature. As pliable slab is ordinarily made to customers' specified sizes its application is quick and unusually economical—no further paper or asphalt or labor being required.

It is pertinent to note that not only does this "sealing flange" give the best hermetic seal we know, but it protects the framing of the refrigerator from moisture deterioration, and prevents moisture reaching and rusting the liner.

A unique test for settlement or disintegration was the hard slamming of refrigerator doors, insulated with Dry-Zero, 50,000 times. At the end of the test the Dry-Zero was found to be in absolutely perfect condition, without a trace of settlement, voiding or disintegration!

The sealing sheet—integral part of Dry-Zero pliable slab—under severe test (University of Minnesota among others) showed absolutely no moisture penetration—a record on a par with all the other characteristics of Dry-Zero.

If, for example, in your refrigerator you change the insulation having an established insulating value of 3.33 for an insulant having an established insulating value of 4.17, you are stopping heat getting through your box by that proportion (less a small part of it that enters through wood framing).

To the distributor this means less running time and servicing costs. To the purchaser it means that much less wear and tear and operating cost. As a matter of fact the distributors who are now using Dry-Zero insulated cabinets with their machines advise that this improvement—and more particularly the instant authoritative proof of the improvement that they have to show—is proving the best sales ammunition they have.

After all, a mechanical refrigerator is primarily an attractive container for keeping heat out. The machine's function—and operating cost—is to pull out the heat that does get in. Ergo, reducing the heat entry into the cabinet—and ready proof that your cabinet does this—seems to react very strongly in favor of sales.

### BALSAM-WOOL SEALED SLABS ARE ANNOUNCED

The Wood Conversion Co. announces that it is now prepared to supply Balsam-Wool insulation ready for application in mechanical refrigerator cabinets. Balsam-Wool Sealed Slabs, it is stated, are so constructed that they combine the desirable features of both flexible and rigid insulants, and are adequately protected against condensation.

These slabs are made by building up layers of Standard Balsam-Wool, applying a semi-rigid edge, and enclosing in a hermetically sealed, waterproof wrapper. The slab thus secured is extremely light in weight and is sufficiently flexible to fit easily into place, and sufficiently

rigid for rapid handling and sealing to the cabinet frame.

The slabs are made in any thickness from 1½" to 5", to exact sizes required, and are ready for installation when they reach the cabinet manufacturer. They weigh approximately 350 pounds per thousand board feet. Their conductivity, it is claimed, does not exceed 6.0 per inch thickness, per square foot, per one degree Fahrenheit temperature difference in 24 hours.

### F. B. CONNELLY CO. GIVING DEMONSTRATION SERVICES FOR THEIR G. E. DEALERS

F. B. Connelly Co., Billings, Mont., are providing the services of a woman demonstrator for their General Electric refrigerator dealers. Miss Iris Davis will have charge of this division and will hold demonstrations where dealers arrange for this service.

The Connelly Co. is furnishing this service, but asking dealers to advertise the event in local papers; mail invitations to local prospects; have hand bills announcing the demonstration distributed the preceding evening; use picture theater slides where advisable; obtain publicity in columns of local papers; provide adequate space for the demonstrations; provide material for refreshments; have suitable display of refrigerators at place of demonstration; have sufficient chairs, and provide necessities for serving refreshments.

The plan is that Miss Davis, in addition to demonstrations, will call on owners of General Electric refrigerators in the different towns and discuss their benefits and uses. Miss Davis will make a written report of such visits to the dealers and will obtain from owners names of neighbors whom they believe are interested in electric refrigeration.

**MORE COOL WATER PER DOLLAR**

### Instantaneous—Handles Peak Loads

#### COOLING DRINKING WATER . . A New Field of Profit!

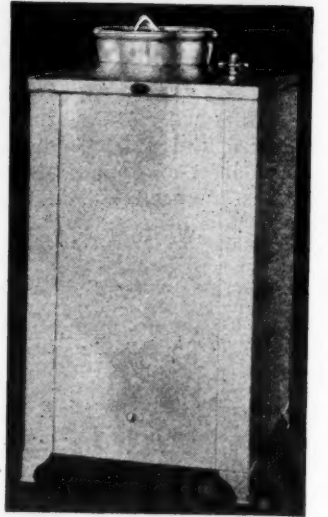
Next to the preservation of food, the most profitable outlet for refrigerator units is for cooling drinking water!

Industrial plants everywhere are volume prospects! You can sell many electric water coolers at less cost and in less time!

#### Real Profits For You

The new Halsey Taylor DIRECT-FLO Electric Coolers give you a superior cooler with exclusive features that will easily clinch sales! It possesses these desirable features:

- Uniformity of Temperature
- Instantaneous Cooling
- Storage for Peak Loads
- Special Duo-Coil which guards against damage by freezing
- Practical sanitary Halsey Taylor 2-stream Projector
- More Cool Water per Dollar



### THE HALSEY W. TAYLOR CO., Warren, O.

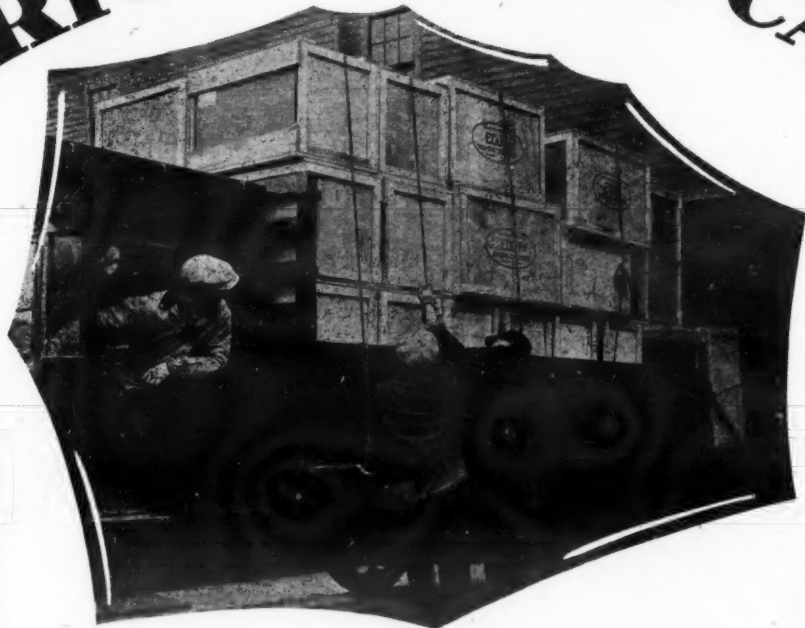
Largest Manufacturers of Drinking Fountains Exclusively

Write for full details. Note—although requiring minimum attention, the lack of proper servicing facilities as yet in some sections makes it necessary to confine the distribution of these coolers to Penna., Illinois, Michigan, Indiana, Ohio, New York and New Jersey only.

## HALSEY TAYLOR Electric COOLERS

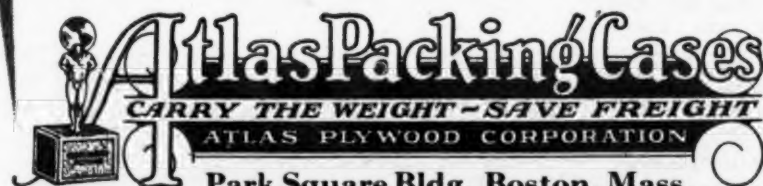
DIRECT-FLO—INSTANTANEOUS COOLING

# ATLAS REFRIGERATOR CASES



**Compact, lightweight, with strongly cleated edges which offer firm hand holds for the shipper and truckman, heavily loaded Atlas Cases can be hoisted to the top of the pile with a minimum of effort. In actual shipment or in storage Atlas Refrigerator Cases give a protection unequalled by any other type of refrigerator container.**

**May we show you why they are most economical in the long run?**



Park Square Bldg. Boston, Mass.

New York Office 33 W. 42nd Street  
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Seven Factories in New England, the South and Canada. Branch Factories in Twelve Cities.

### 5,000 Gas Refrigerators Sold in New York City in 1928; Add 100 Million Cubic Feet to Gas Company Load

**D**OMESTIC gas refrigeration as an important step in eliminating seasonal peaks, thus permitting a more economic use of manufacturing equipment, is seen by Oscar H. Fogg, vice-president, Consolidated Gas Company, New York City.

Referring to his company's annual report which has just been released, Mr. Fogg stated that the refrigeration division exceeded its 1928 estimates by installing more than 5,000 gas refrigerators in apartments and individual dwellings. Excluding the 1929 business, which Mr. Fogg anticipates will be much larger, 1928 installations will add nearly one

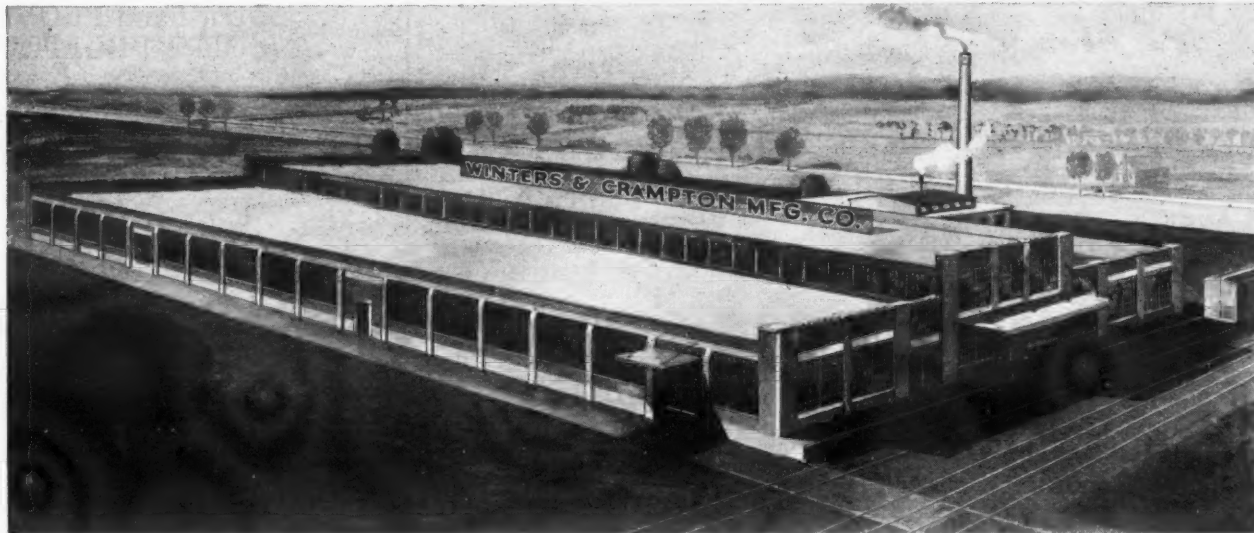
hundred million cubic feet to the annual send-out.

"The largest consumption of gas has always been during the cold weather months when people remain in the city, and when industries are operating at capacity and heating adds its large volume to the normal load," Mr. Fogg stated. "When warm weather approaches, however, the demand diminishes, and our equipment cannot be used so advantageously. Although the amount of gas used by the individual refrigerator is small, the aggregate during the summer tends to make possible a more economical use."



# *The New Home of* **Winters & Crompton Mfg. Co.**

WORLD'S LARGEST EXCLUSIVE MANUFACTURERS OF REFRIGERATOR HARDWARE



Effective March 15 the executive offices and manufacturing plant of the Winters & Crompton Manufacturing Co., world's largest exclusive manufacturers of refrigerator hardware, will be located at our new plant at Grandville, a suburb of Grand Rapids, Michigan.

The imperative need for larger plant facilities to manufacture the rapidly increasing volume of refrigerator hardware orders has necessitated the moving of all operations from the old factory building at Commerce Avenue and Goodrich Street, Grand Rapids, to our new home.

The new building contains approximately 60,000 square feet of floor space. Every requirement needed to complete a building of the finest type of industrial construction has been met in our new plant. Most of the equipment installed in the factory is new.

We are now prepared to render our customers a service even better than heretofore. Larger production facilities, however, will not affect the workmanship of Winters & Crompton products. Constant adherence to standards of the highest quality has been responsible for past growth and success and this policy will, of course, remain unchanged.

# **Winters & Crompton Mfg. Co.**

MANUFACTURERS OF REFRIGERATOR HARDWARE

GRANDVILLE, MICH.



A. F. Winters, Vice-Pres. and Treas.



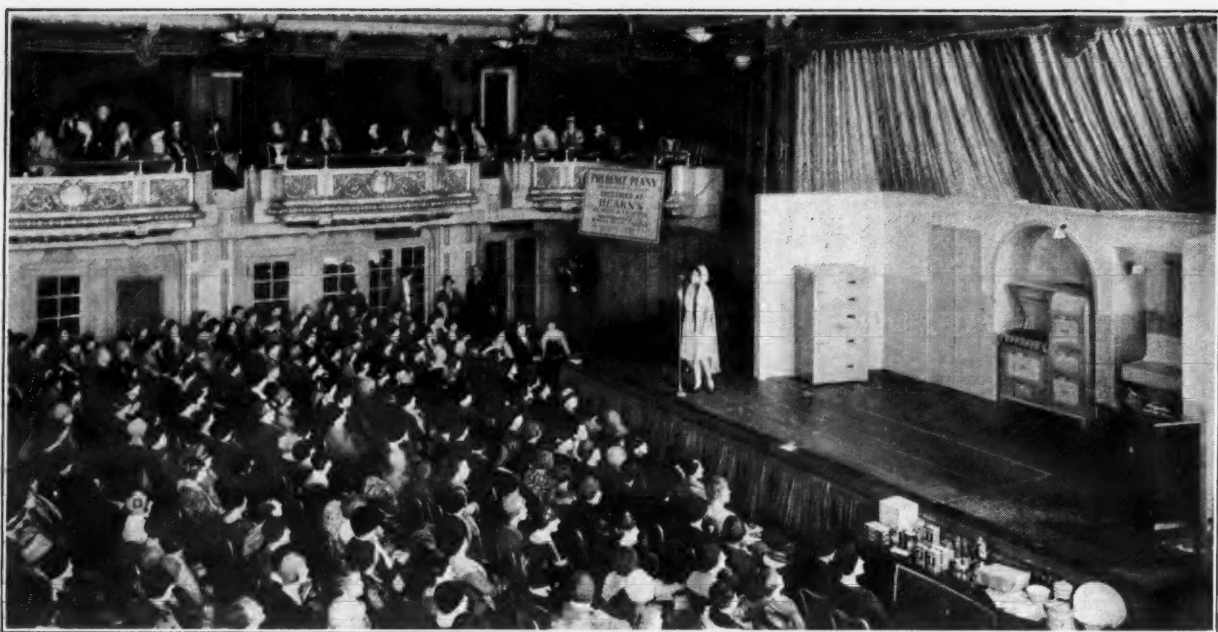
B. R. Crompton, Pres.



H. E. Bouwknecht, Secy.



## Prudence Penny Demonstrates Electrolux to 4,000 Women in New York City



For the automatic refrigerator of the modern kitchen which she is using during her lectures, Prudence Penny, domestic science editor of The New York American, is demonstrating the Electrolux gas refrigerator. She is pictured here at the Hotel Astor on Broadway talking to more than 4,000 women. So popular have these lectures become that henceforth they will be held in Carnegie Hall which has a greater seating capacity.

## Selling Electric Refrigerators In The Wide Open Spaces

Prospects Are 18 Miles Apart and Pride of Ownership is the Strongest Selling Appeal

By Willis Parker

OUT in Wyoming it's a long way between "drinks," and, outside of the few small towns and cities, the electric refrigerator salesman has a long ways to travel between prospects. Yet, because they are accustomed to it, the salesmen think no more of travelling 35 miles to see a prospect than many salesmen think of traveling a mile.

In the country districts the average distance between ranch houses is 18 miles. Generally it is much farther, for it is only in the close vicinity of the scattered small cities that short distances bring down the average to 18 miles.

Territories are also large. Take the territory of The Simpson Electric Co. of Cheyenne, Wyo., for an example. C. H. Simpson is manager and his territory consists of but one county of which Cheyenne is the county seat. The county is 140 miles long and 76 miles wide. Sixty miles is not a long distance for a service call. Nor is 35 miles to see a prospect anything out of the ordinary.

Selling electric refrigeration to the farmers—ranchers as they call them in the west—is accomplished with fewer interviews, perhaps, than it is in the cities or in communities more thickly settled. Pride of ownership plays just as important a role in the rural districts as it does in the city, and, it is quite possible that it plays a more important part. It is upon the pride of ownership element that Simpson depends for most of his prospects. Then, because the selling season is short, he accomplishes his work quickly and by the use of a certain type of high-pressure salesmanship, a type that is shared equally by the salesman and the prospect.

Have Only Four Business Months During the Year

"Most of our rural district customers are cattle people," Mr. Simpson explained. "They grow one crop and it is marketed in the fall. Hence we can do business with them only four months out of the year—September, October, November and December. If we do not sell them within these four months, we may just as well forget all about them until the following September. We have

to begin early in the selling season, too, for with the cash obtained from the sale of their cattle and sheep, mostly cattle, the rancher and his family not only pay off their debts, but also buy the luxuries, improvements and other things they desire. If we don't get to them early, the automobile dealer will or the money will go into fur coats, new furniture and goodness knows what else.

Prospects Cards Are Filled According to Cattle Marketing Dates

"Therefore we begin to shuffle our prospect cards about September 1st and deal them out according to market conditions and the dates on which the ranchers dispose of their cattle. Since most of them bring their cattle to or through Cheyenne on their way to market, we generally know when this rancher of that has sold his stock and therefore has money in the bank.

"During the summer Mrs. Rancher has been thinking about an electric refrigerator. It gets hot in Wyoming in the summer, in my territory at least, and as a rule the lady is pretty well sold on the idea by the time Fall sets in. During the summer she and the rest of the family have discussed the subject. They have visited other ranch homes where electric refrigeration had been previously installed, and the success of the operation of the unit in the homes of their friends quickly arouses a desire to possess one likewise. That desire has been working all summer long. Mrs. Rancher has sold herself on the subject and when we come around to see her, she's usually already to buy—providing, of course, there are sufficient funds in the bank after other expenses have been met. As a rule we conclude the sale in one interview. We lose money if we have to call back several times, for, be-

cause of the distances, we can scarcely hope to call on more than two prospects in one day. Oh, of course, they sometimes will visit our sales room when they drop into Cheyenne and discuss the matter further, but we can scarcely call the time given under those conditions sales expense.

"We get our prospects in two ways. First we get the names of those who drop into the sales room in the summer time to look at the units—look and wish—and then we get some from our users who have heard this ranch woman and that remark about the possibilities of buying an outfit themselves, when they were calling and saw how convenient modern refrigeration might be on their own places. Our users are generally kind enough to drop us a note about prospects or tell us when they come into town on other errands."

Out in this country social functions are usually of many hours duration. All night parties and dances are the rule and not the exception, and it is not uncommon for the people to drive 40, 50 or 60 miles to attend such a social function. Therefore they have many hours to "drink" in the interesting accounts of what the hostess has been able to accomplish with her electric refrigerator and to test out the frozen desserts made in it. If it is a newly-installed unit, it may be one of the main topics of conversation during the evening—and night. Mrs. Jones gets Mr. Jones off in a corner and says "If the Smiths can afford an electric refrigerator, we can also." And then the fun begins.

Large Percentage of Sales Are Made For Cash

More than 90 per cent of the sales are made for cash. This is pretty business for the electric refrigerator dealer, for he is spared the problem of collections and keeping the customer in a good humor until the unit is paid for. Hence service calls are few and far between. In fact free service is not given to the country customers, says Mr. Simpson. That's nice, too, as any city dealer will admit. He charges 10 cents a mile and a dollar and a half an hour for the serviceman's time on all service calls in the country. This makes his service department a paying proposition from the day the unit is installed, and it reduces the number of minor calls so disconcerting to the average dealer. In practice the charging for service calls cuts the usual number of calls in half, as Mr. Simpson is able to verify because he does give 90 days' free service on units sold in Cheyenne and is therefore able to make an accurate comparison. If Mr. Rancher knows he will have to pay around ten dollars to get a service man out to fix the machine, he'll take the time and trouble to try to fix it himself first. Simpson does not receive more than one call a year per unit installed in the country. The average distance covered on a service call is 35 miles. His farthest customer is 126 miles away.

Another nice thing about the country sales is that the units are all large ones. Most of the ranch establishments are large, employ many men who must be fed, and a small unit never would be able to preserve the food products required. Also, it is just as easy to sell a box with an expensive finish as one that is a lacquer finish. A few dollars more makes no difference.

As an example of how important a role pride of ownership plays in the proposition, Mr. Simpson cited the fact that in November, 1927, he sold a unit to a rancher living 20 miles from Cheyenne. Before another twelve months had rolled around he had six more installed in the district. Every one of them were sold as a result of neighboring ranchers calling at the home of the first user.

## BUSINESS OPPORTUNITY

For a progressive dealer to handle the Williams Ice-O-Matic line of Electric Refrigerators and Cabinets.

A Few Metropolitan Cities Open.

The Williams Ice-O-Matic unit is something NEW and DIFFERENT in Electric Refrigeration, built by the world's LARGEST manufacturers of oil burners—backed by a NATIONAL advertising campaign including magazines, newspapers and RADIO broadcast over NBC Chain every Tuesday night, 10:00 to 10:30 P. M., Eastern Standard Time.

A tried and PROVEN sales plan that will produce PROFITS.

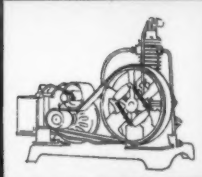
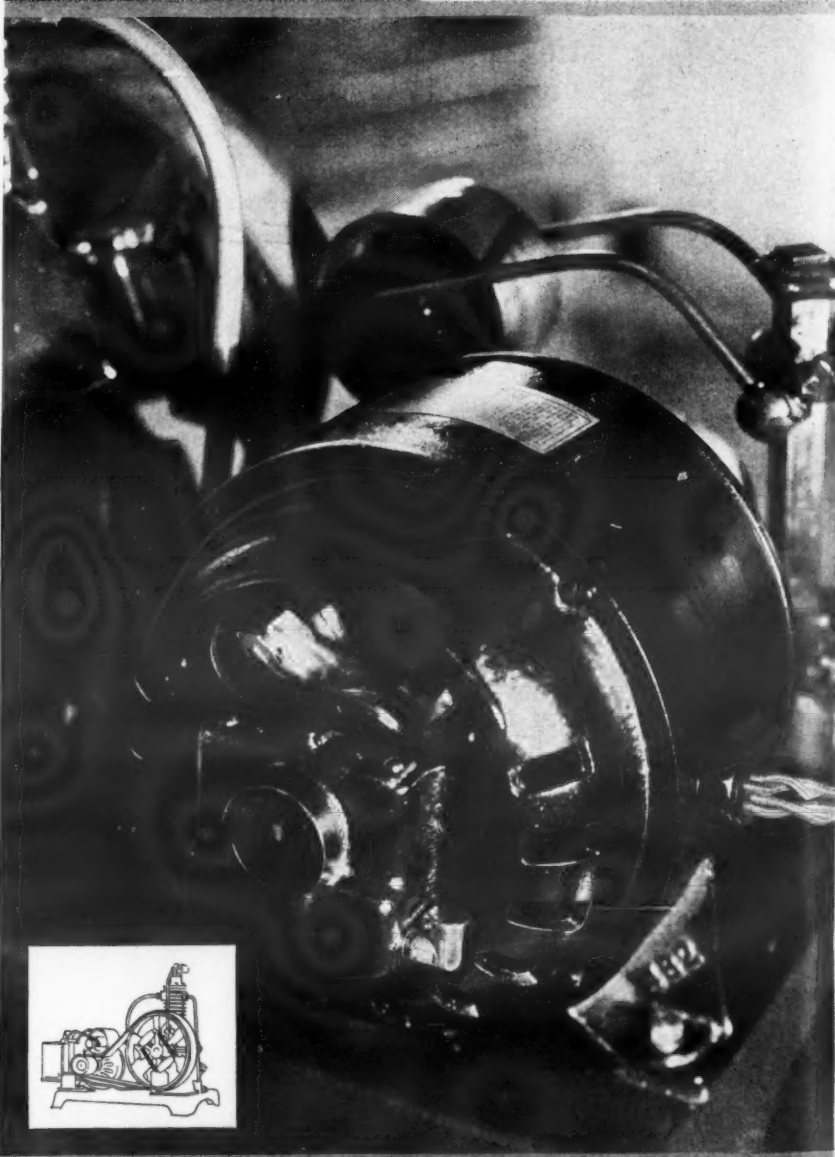
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**WILLIAMS  
ICE-O-MATIC  
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**Williams Oil-O-Matic  
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## Refrigeration Standard Small Motors

Wagner has developed a complete line of motors to the exacting domestic refrigeration standard... single-phase, poly-phase, and direct current. Behind every Wagner small motor is the entire experience of one of the oldest electrical manufacturers in the country.



Use Wagner's 38 years of motor experience in solving your motor problems.

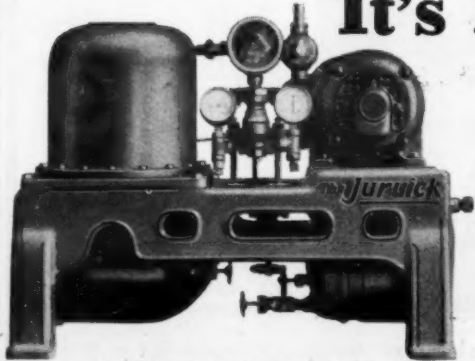
Literature on request

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6400 Plymouth Avenue, St. Louis, U. S. A.

Wagner Sales Offices and Service Stations in 25 Principal Cities

Products: FANS... Desk, Wall and Ceiling TRANSFORMERS... Power, Distribution and Instrument... MOTORS... Single-phase, Polyphase and Direct Current

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**The  
Juruick  
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¼-Ton Capacity

Here's the machine you have been waiting for... Dependable, economical, simple in design, self-contained, automatic, shipped ready to set up. Easy for the user to operate... and easy for the dealer to sell.

The complete Juruick line includes machines up to 30 tons capacity

**AMERICAN ENGINEERING COMPANY**  
2420 Aramingo Ave., Philadelphia, Pa.



# FOOD PROTECTION

## 85% of Food Merchants' Losses Are Preventable Through Proper Application of Electric Cooling

By George R. Lindahl, Sales Manager  
Commercial Refrigerator Mfg. Co., Los Angeles, Calif.

THE perishable food merchant suffers losses running into the millions of dollars annually. About 85 per cent of these losses are preventable through the proper application of refrigeration. To the average layman the word "refrigeration" simply means bringing down the temperature in a container in which food is stored. The word "refrigeration" means a great deal more than that.

Refrigeration of perishable foods means, "keeping perishables in their natural state as long as possible without loss to the merchant in spoilage, de-hydration or contamination, at a low maintenance and operating cost." Before we know how to properly preserve foods it is well to know why foods spoil. In this discussion let us take the case of the retail meat merchant.

Spoilage of fresh meat is caused primarily by the growth and multiplication of the "decay bacteria." The decay bacteria is a single cell animal, composed of approximately 85 per cent water and 15 per cent protoplasm, which is about the same proportion in human or animal cells. This single cell bacteria reproduces its kind by simply dividing itself when it reaches a certain size.

Thus to prevent the bacteria from dividing and reproducing itself we must first prevent its growth. As an indication how rapidly they multiply about 15,000,000 can be produced from a single cell in a few hours' time under favorable temperature and humidity conditions.

### De-hydration, Pickling, and Refrigeration Inhibit Bacterial Growth

Bacteria are prevented from growing by three distinct methods: (1) By de-hydration (either heat or circulating air). This method takes the water away from the bacteria and actually causes it to shrink in size. This prevents its growth. (2) By pickling with salt or sugar. This also takes the water away as water has an affinity for salt or sugar. This also prevents growth. (3) By refrigeration. A book could be written about the first two methods but we are, for the time being, interested in the third method, which is the principal method used for fresh foods.

Bacteria grow best at body heat, about 98 degrees F., providing the relative humidity is high. Even at 98 degrees in dry air bacteria do not do very well. At 140 degrees very few bacteria can exist as heat kills bacteria more quickly than does cold. Many bacteria have been found alive after being immersed in liquid air which is quite near the absolute zero point. While they may live at this low temperature they are absolutely dormant, hibernating as it were. Even in higher temperature up to 32 degrees F. (freezing point of water) they are still dormant.

Logically then, it follows that since extreme heat is not practical in preserving fresh meat that cold must do the work. Freezing meat (below 32 degrees F.) is injurious unless the meat is sharp frozen. By "sharp freezing" is meant plunging the meat into brine or air at temperatures 40 degrees F. below zero. In this way the meat is almost frozen instantly and no harm to the tissues results. Slow freezing (25 degrees to 32 degrees) above zero F. is extremely harmful to meat. In slow freezing the water and protoplasm in the cell divide. That is, the water goes to one side of the cell and the life fluid to the other side. Water that is slowly frozen forms very sharp star-shaped crystals and expands about one-seventh in freezing. The formation of these sharp crystals under expansion punctures the cell walls. When this meat is thawed out the juices in the cell run out through these incisions and most of the flavor of the meat is lost. The walls of the cell are the main bulwark against bacteria getting in. When these walls are broken it provides easy access to the decay bacteria. That is why frozen meat that has been thawed spoils in a few hours' time, while meat that has been sharp frozen or merely kept at temperatures slightly above freezing can be kept in good condition a day or so without refrigeration.

Thus to keep fresh meat fresh it is necessary that it either be "sharp frozen" or kept at the nearest temperature to freezing, which is of course 33 degrees F. Fresh meat kept at 33 degrees F. will retain its "bloom" and actually improves in flavor during the first 30 days. The principal objection in most markets to keeping meats this long is that weight of the product is lost through de-hydration (shrinkage). The average shrinkage loss in the average meat market using the standard walk-in refrigerator and two or three

single deck glass display cases with an ammonia ice machine is approximately 2 per cent of the volume handled. This means a dollar and cents loss to the merchant of \$10.00 per week if the volume of sales is \$500.00 a week. This loss of \$520.00 a year can be reduced at least 85 per cent under proper refrigeration.

The principal cause of shrinkage is due to low coil temperatures which cause to be set up a rapid movement of air within the container. This air passing over the meat every few seconds or minutes picks up particles of moisture from the surface of the meat, carries it to the overhead coils, where it is condensed and frozen and eventually run off down the drain into the sewer. By eliminating the overhead type of bunker and proper distribution of sufficient coils in the container with a high suction pressure, this circulation of air can be reduced at least 85 per cent with an 85 per cent decrease in de-hydration. As a concrete illustration of this the following illustration is cited:

The writer recently designed a 4 ft. x 8 ft. x 7 ft. high wall cooler with five hundred feet of 5/8 in. copper tubing on the back wall and on the two ends. These coils were closely spaced and ran from the top down about two-thirds of the way to the bottom of the cooler. The refrigerant went into the top coil first through a scale trap and an American expansion valve. A suction pressure of 1 pound was maintained. The temperature in the refrigerator was kept between 34 and 38 degrees F. controlled by a mercoid switch. From 1,000 to 1,500 lbs. of fresh meat was kept at all times.

Every morning hot meat from the packers' delivery wagons was placed in this refrigerator with the butcher working out of it as needed throughout the day. The coils, during this period showed only a trace of frost on the "down cycle" and a slight wetness on the "up cycle." Under the coils was a suitable drain pan and a bucket was set under the drain terminus. At the end of thirty days the total amount of water taken from this cooler with the coils perfectly clear was just 5 pounds. The machine used was a standard Kelvinator air-cooled model "G" compressor.

### Discoloration Is Caused by Decomposition, Chemicals and De-hydration

Another point of interest in this test was the absolute elimination of discoloration of the meat stored. When discoloration is not caused by decomposition or the influence of chemicals it is usually caused by de-hydration. The coloring matter in the blood is known as "hemo-globin" and is a real dark red color. As the animal takes air into the lungs the oxygen (one-third water) mingles with the hemo-globin forming what is known as "oxy-hemo-globin" or the natural color of fresh rich blood.

As the water (one-third oxygen) is drawn from the meats through de-hydration the "oxy" in the hemo-globin is slowly withdrawn, thus turning it back to the original dark red color of hemo-globin. Thus to prevent discoloration (when foods are properly kept regarding temperatures) it is also necessary to prevent de-hydration, as discoloration and de-hydration always go hand in hand.

Contamination is also a source of annoyance and expense to the perishable food merchant. Circulation of air is also the primary cause of contamination, providing that the circulating air passes over and around several classes of foods before reaching the coil. Odors (gas from decomposing matter) is carried along with this circulating air and is absorbed by foods for which it has an affinity, such as smoked fish and cottage cheese. Contamination of foods due to transfer of food odors can be prevented through a reduction of circulation and proper arrangement and distribution of coils.

As an illustration of how contamination was prevented we designed a three-deck high display case of triple plate glass. Over each deck was placed several rows of copper coils, with a sweat proof drain pan directly under these coils. By using a large lineal footage of coils and operating on a high suc-

tion pressure, we were able to place a platter of fresh fish on the bottom deck, cottage cheese on the center deck directly over the fish and fresh butter on the top deck directly over the other two items. Over thirty other items of food were scattered around in this fixture.

After a week's test we were not able to detect the slightest evidence of a transfer of one food odor to another food. Local food merchants who visited this test refused to believe their own different foods on display. This test was conducted in an operating meat market under usual operating conditions. Since that time we have placed quite a large number of these fixtures in markets and they all operate as well as did the test fixture.

The writer knows that these statements will be disbelieved by a large number of perishable food men as well as refrigeration engineers, but these are actually operating for all men to see and it is no longer a point of controversy locally.

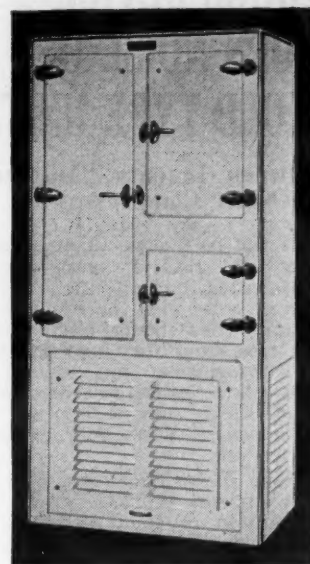
The electric refrigeration industry is a young industry and should always be open to new and better ideas. No matter how impossible or improbable these ideas seem it is well to maintain an open mind before passing final judgment. Hard and fast rules in the commercial application of refrigeration will do more to stifle the industry than any other thing. The leaders of the industry have heretofore frowned on applying the direct expansion principle to commercial refrigeration, but, as one very far-seeing executive aptly put it, "we don't want to get into direct expansion but we are being kicked into it." It seems queer to the writer that this condition should exist in a new industry.

## A National Acceptance

The gratifying reception that has been accorded the NEW BOHN SANITOR series is undoubtedly due to its low price—but by no means to price alone, for in every detail of its construction BOHN standards have been adhered to rigidly. Here is a super-quality, all-porcelain refrigerator that is as beautiful in appearance as it is efficient in service. Quantity production brings its price within the reach of the majority of families in your community.

These models together with those of the other famous BOHN Lines combine to make a group of refrigerators that answer every requirement in style, size and price.

Our catalog gives complete information and it is yours for the asking.



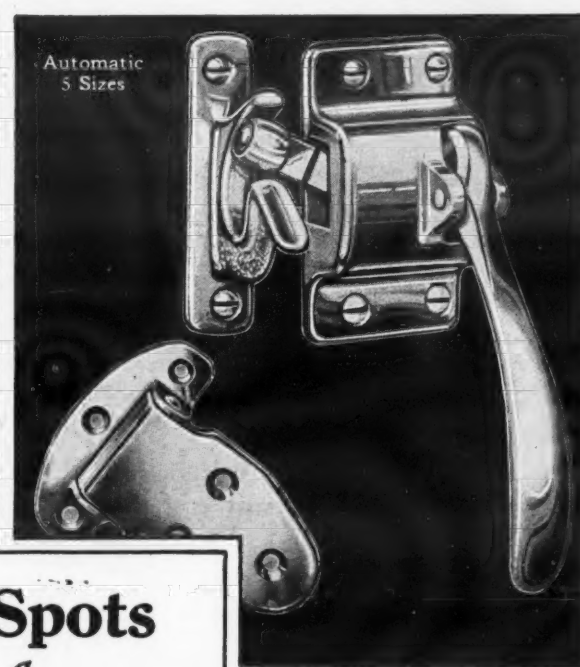
Nothing finer can be said of a refrigerator than  
"It was built by BOHN."

**BOHN REFRIGERATOR COMPANY**  
SAINT PAUL, MINNESOTA

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## High Spots in a High Powered Line



### PATENTED AUTOMATIC LATCHES

HERE are shown latches and hinges that are giving service and satisfaction on many of America's outstanding refrigerators. In the upper left is shown our 4061 reversible roller latch, a very sturdy model with a large following because of its simple, fool-proof design. Series 4014, shown in the upper right, is exclusive with us—a powerful, positive, automatic roller latch for commercial installations. Series 4074 in the lower left is an automatic model with an extra strong, deep throw, in which the shape

of the strike acts as a wedge, closing the door tight under all circumstances. At the lower right is series 4044, the most simple automatic reversible latch ever devised, with a patented spring and bolt action that is absolutely positive. All of these models are available in heavy nickel, genuine chrome plate, or any special finish desired. We will be glad to call with a full line of samples. If you prefer, we will mail samples with complete information and prices.

**SERVICE AND  
BEAUTY IN  
METAL**



SPECIAL ATTENTION GIVEN INQUIRIES FROM RATED MANUFACTURERS

**GRAND RAPIDS BRASS CO.**

GRAND RAPIDS, MICHIGAN



## NEWS FOR SERVICE MEN

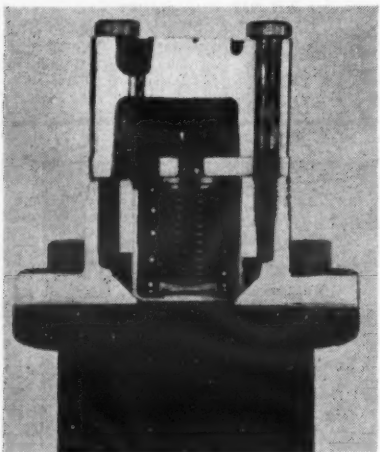
### INGENIOUS DEVICE STOPS NOISE OF OLD-TYPE UNITS

Eddie Owens Invents "Muffler" for Nizer Compressors

DURING the past year all manufacturers of electric refrigeration have been focusing their attention on the elimination of noise with the result that the new units now being offered are practically free from this objectionable feature. The problem has remained, however, in connection with earlier models, many of which show a tendency to become increasingly noisy with continued operation and wear.

How patient persistence won over a particularly stubborn problem is revealed by the invention of the Owens Valve Silencer, developed by "Eddie" Owens, well known refrigerator service man of Detroit. For many years Mr. Owens, formerly connected with the Nizer organization, combated the exhaust valve "clack" in Nizer compressors, a trouble which caused many complaints against a machine otherwise highly efficient and economical.

The Nizer exhaust valve is a cup-shaped poppet valve held on its seat by a light spring. Within the valve is a



large faced stop backed by a heavier spring and held by two nuts which are adjusted to allow about six-thousandths of an inch clearance between the valve and the stop. This arrangement is to prevent excessive valve lift when pumping gas in normal operation but by compressing the heavier stop spring allows additional lift when the compressor is pumping oil.

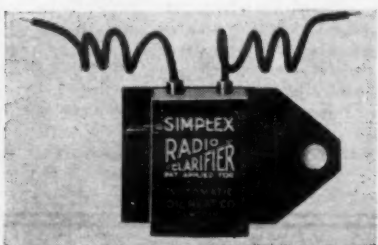
When properly adjusted these valves are fairly quiet. But Eddie found, in every case where a machine had to be taken in from the field because of complaints about noise, that the stop face was worn so that the clearance between the valve and stop had increased to ten or twelve-thousandths. This had resulted in a pounding that could be heard all over the customer's place of business.

After many false starts, Eddie conceived the idea of flooding the entire mechanism with oil and did this by attaching a simple cap over the entire valve head. The cap has perforations for allowing the gas to escape but keeps about a quarter pint of oil on the valve and floods the clearance between the valve and stop.

Repeated tests made by attaching these silencers to noisy valve heads without change in the adjustments show that the pounding is stopped positively and that the silencer has a muffler action which results in such quiet operation that the machines can be heard only a few feet from the cabinet. Careful checks on the test machines for pumping efficiency showed that in no case did the addition of the silencer lower the efficiency.

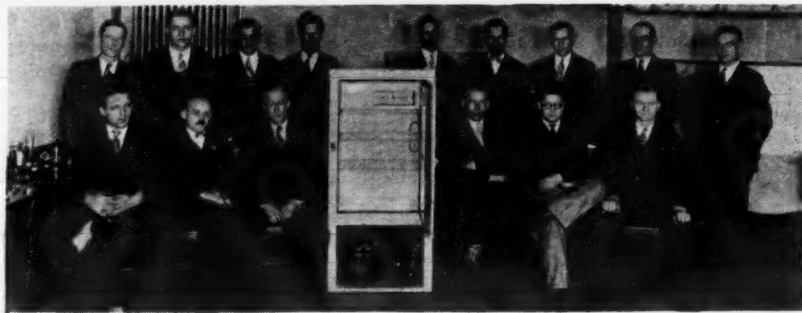
Mr. Owens has applied for a patent on his device and has made arrangements with the Kelray Laboratory, 3940 Gibson St., Detroit, Mich., for its manufacture and sale.

### DEVICE OFFERS TO STOP RADIO INTERFERENCE



Automatic Oil Heat Co., St. Paul, Minn., have put on the market a radio clarifier, which stops radio interference from oil burners or electric refrigeration, caused either from motor or electric ignition. It is marketed under the trade name of Simplex Radio Clarifier.

### 14 Attend Service School Conducted by Serval Sales, Inc., For Wisconsin Valley Electric Co.



Serval Sales, Inc., conducted a service school recently for the Wisconsin Valley Electric Co., Wausau, Wis., and its 12 subsidiary companies.

R. E. Montgomery, factory service instructor of Serval Sales, Inc., conducted the classes. He instructed service men on the 1929 line of Serval domestic and

commercial units. Fourteen men attended the class.

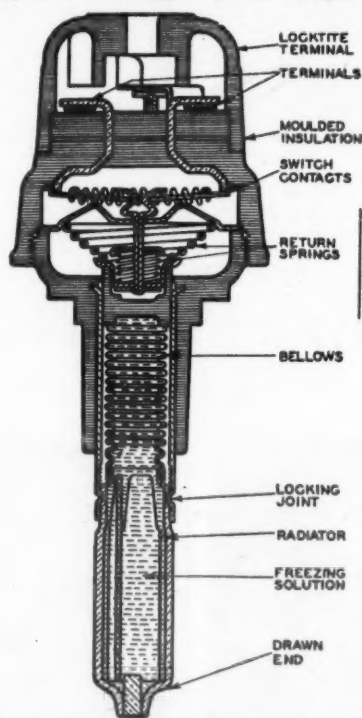
Other Serval representatives were Gordon Cameron, assistant sales manager; R. C. Ryan, territory service supervisor; E. F. Moran, sales representative. Frank Evans, commercial manager of the Wisconsin Valley Electric Co., attended.

### NEW RANCO CONTROL SWITCH ANNOUNCED

THE Automatic Reclosing Circuit Breaker Co., Columbus, Ohio, announces a new and improved model of Ranco control for 1929 production. This thermostat control is designed especially for use on household refrigerators and provides for easy mounting and servicing.

The switch element is completely sealed in an air and water tight bakelite shell. The operating unit consists of a small bellows attached to a liquid bulb and the operation is effected by the expansion of the liquid upon freezing. This provides a positive operation at any desired temperature.

The thermostat is provided with a special locktite terminal cap which makes an easy means of connection; but provides a tight clamping action with positive contact and one which will not work loose or cause radio disturbance due to loose contacts. The cap also forms a practically moisture proof connection. By a new arrangement of design the



soldered joints have been reduced to only one soldered joint less than one inch long. The switch parts have been re-designed so that they are all made by stamping operations making it possible to get quantity production and a very high accuracy of parts.

### DEVICE MAKES CUBES IN REGULAR ICE REFRIGERATOR

The American Refrigerator Corp., Peru, Ind., is including with their Queen Anne model refrigerator, a mold with which ice cubes can be made in an ice refrigerator.

The mold is placed on top of the cake of ice and as the ice melts the mold forms the cubes which are one and a half inch square. By warming the mold the cubes can be obtained in one and a half to two hours. The mold is two cubes wide by six cubes long, measuring 3 3/4 inches wide and 10 inches long.

### Lassen Leaves Electro-Kold

Manuel Lassen has resigned his position as chief engineer of the Electro-Kold Corp., Spokane, Wash. He is expected to spend the balance of this year in Europe.

### FURTHER DISCUSSION OF METHODS FOR PROTECTION OF CIRCULATING SYSTEMS

NOTE—In the Feb. 13 issue of the NEWS on page 9, H. P. Greggerson, Kelvinator service manager of the Northwestern Public Service Company, Huron, S. D., suggested a hookup, using an automatic cut-in relay, for protecting refrigeration systems using a brine pump. Copies of Mr. Greggerson's letter were sent to several manufacturers with the request that they offer their opinions. Letters were received from the Brunswick-Kroeschell Co. and Peerless Ice Machine Co. Following is a further comment on the subject.

PEERLESS ICE MACHINE CO.  
CHICAGO, ILLINOIS

March 6, 1929.

Electric Refrigeration News,  
Detroit, Michigan.

In the February 27 issue of Electric Refrigeration News, S. B. Carpenter of Brunswick-Kroeschell Company outlines a system for preventing cooler freeze-ups on a brine circulating system. The particular system disclosed provides protection only under certain conditions but does not provide protection under all conditions.

The only method providing 100 per cent protection against cooler freeze-ups on a circulating system is one based upon controlling the starting and stopping of the compressor responsive to the flow rate of the circulated brine.

In the Peerless brine circulating automatic refrigerating system the thermostat starts the circulating pump, the brine flow starts the compressor, and if for any reason whatsoever the brine flow drops below a certain minimum, the compressor is stopped.

The action of the Peerless flow rate switch is absolutely independent of any pressure variations and operates entirely from the flow rate of the circulated brine.

A. F. HOESEL.

### GEUDER, PAESCHKE & FRY CO. NAMES OFFICERS AND DEPARTMENT MANAGERS

At a recent meeting of the board of directors of the Geuder, Paeschke & Frey Co., Milwaukee, Wis., manufacturers of stampings and pressed parts, the following officers and department managers were elected: Charles A. Paeschke, president; F. L. Frey, first vice-president and treasurer; Charles Paeschke, Jr., vice-president and secretary; Frank Frey, Jr., vice-president and production manager; John M. Harmon, assistant secretary; Phil Kempter, works manager; Henry F. Millman, manager of purchases, and Carl H. Voss, sales manager.

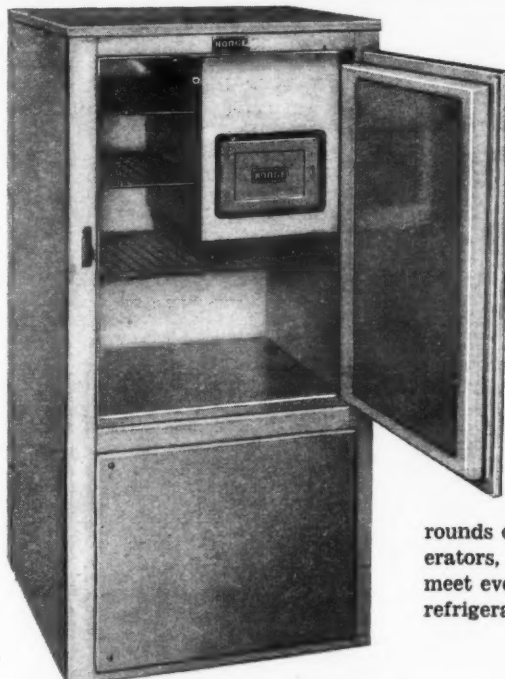
### LASSEN — TEMPERATURE — CONTROLS

POSITIVE RANGE AND DIFFERENTIAL ADJUSTMENT  
NON-DETERIORATING MERCURY TUBE SWITCH—MEET ALL REQUIREMENTS  
GOODNOW & BLAKE MFG. CO. 3840 BEAVER STREET  
DETROIT, MICH.

Every Cylinder Analyzed **SULPHUR DIOXIDE**  
Absolutely Pure for DIRECT CHARGING  
Bone Dry  
also Ton Drums  
Tank Cars  
ANSUL CHEMICAL COMPANY  
MARINETTE WISCONSIN

## Built to be Quiet New Norge Model 300 Exceeds All Expectations

"QUIET and stays quiet," is an accurate description of the new Model 300. But quietness alone does not account for the remarkable record this new Norge model has already made in its first month in the hands of Norge distributors.



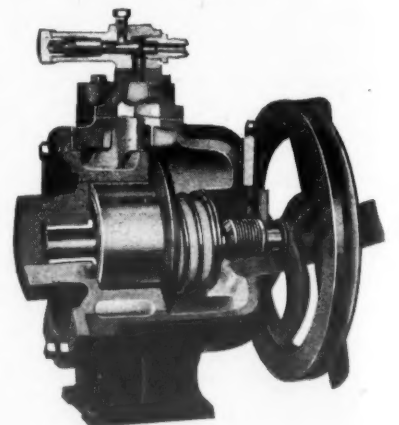
In building this new model, quietness was not the only object. Dependability, beauty, efficiency, are also qualities of the new Model 300, as well as the rest of the Norge line, which contributes to its salability and trustworthiness.

A new field of sales possibilities has been opened up for every Norge distributor with the addition of this model to the line. It rounds out a line of De Luxe refrigerators, and enables distributors to meet every requirement for domestic refrigeration service.

### Quiet—Due to Rotary Compressor

Norge quietness is due to its rotary compressor. The compressor is the heart of a refrigeration system. The Norge rotary compressor "wears in instead of wearing out." It compensates for its own wear. This rotary compressor, with its fewer moving parts, spells quietness to a remarkable degree and literally means "lifetime refrigeration" for Norge owners.

Territory for the sale of Norge quiet refrigeration is still available. Write or wire for detailed information and literature describing the Norge.



## NORGE

ECONOMICAL REFRIGERATION

DETROIT

MICHIGAN

## "NEW ZERO" LINE OF GUARANTEED COMMERCIAL INSTALLATIONS

Your Choice of

### METHYL CHLORIDE or AMMONIA

A Distinct Machine for Each Refrigerant

WE FURNISH

### HIGH and LOW SIDE

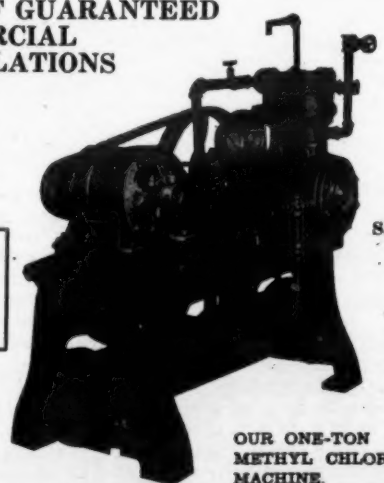
COMPLETE INSTALLATIONS

ZANESVILLE ENGINEERING CORPORATION

ZANESVILLE, OHIO

TERRITORIES OPEN TO DEALERS

1/4 TO 2  
TON  
CAPACITIES



Service  
and  
Satisfaction

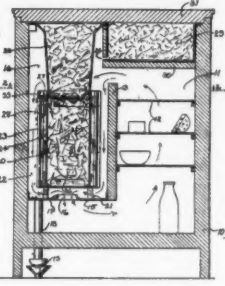
OUR ONE-TON  
METHYL CHLORIDE  
MACHINE.



## Record of Refrigeration Patents Issued Since January 1, 1929

## Issued Jan. 1

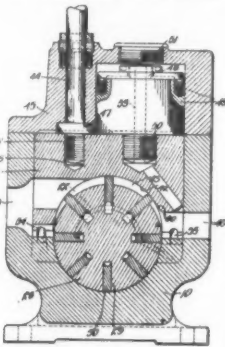
1,696,956. REFRIGERATOR. WALTER ANDREW INMAN, Waukegan, Ill. Filed Jan. 24, 1927. Serial No. 168,160. 7 Claims. (Cl. 62-51.)



1. In a refrigerator, the combination of a liquid-receiving container having heat-conducting walls, and an ice receptacle mounted within said container and providing a surrounding liquid-receiving space between said receptacle and container, said receptacle including side walls imperforate at an intermediate portion and said space communicating with the interior space of said receptacle at regions spaced vertically apart by the imperforate intermediate portion of said side walls to provide a thermo-phion circulation of liquid downwardly in said ice receptacle and upwardly in said surrounding space to cool the walls of said container.

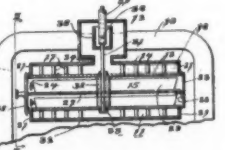
1,697,041. VARIABLE-CAPACITY PUMP. HAROLD E. BALCHER, Waynesboro, Pa., assignor to Landis Tool Company, Waynesboro, Pa., a Corporation. Original application filed July 13, 1926. Serial No. 122,197. Divided and this application filed May 13, 1927. Serial No. 191,155. 9 Claims. (Cl. 103-120.)

1. The combination of a housing, a cylindrical opening in said housing, a block having one surface forming a portion of the cylindrical opening, said block being movable to vary the size of said opening, a rotatable member within said cylindrical opening, radially disposed blades carried by said rotatable member, means for moving said block inwardly and outwardly to vary the capacity of the pump and manually operable eccentrically mounted means for



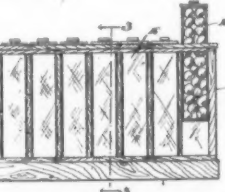
adjustably varying the extent of movement of said block and means for balancing the block to permit it to be manually manipulated, substantially as set forth.

1,697,185. REFRIGERATOR. HERBERT T. HERR, Philadelphia, Pa., assignor to Westinghouse Electric and Manufacturing Company, a Corporation of Pennsylvania. Filed June 4, 1923. Serial No. 643,403. 3 Claims. (Cl. 62-95.)



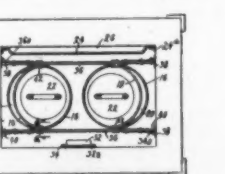
2. The combination with a refrigerator box, of a cooling element arranged within the refrigerator box and comprising a plurality of compartments joined in stepped relation, the joint connecting the compartments being exposed to the interior of the refrigerator box, one of said compartments forming an ice-making chamber and the other of said compartments forming a refrigerant expansion chamber.

1,697,294. COMBINATION MERCHANDISE DISPLAY AND COOLING CASE. LESLIE T. SUMMERS, Dallas, Tex. Filed Mar. 24, 1927. Serial No. 178,018. 3 Claims. (Cl. 62-37.)



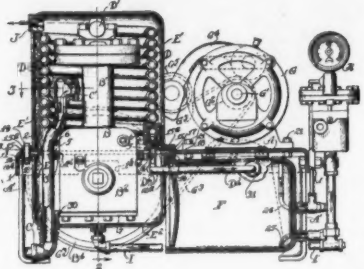
3. A fixture of the character described comprising a case having a central ice chamber and provided with perforations in its floor; superimposed merchandise compartments below said ice chamber also having an apertured floor; a basin below said compartments to receive and dispose of drippings from said ice chamber after having penetrated said compartments; a multiplicity of display compartments slidable endwise into said case rearwardly of said first compartments and ice chamber to be vertically disclosed, and means to permit circulation of air through said display compartments from said first compartment.

1,697,313. ICE-CREAM-STORAGE CABINET. FRANK M. GRAHAM, Ottumwa, Iowa. Filed Sept. 27, 1927. Serial No. 222,288. 6 Claims. (Cl. 62-75.)



1. In a storage cabinet, a cabinet having a refrigerant compartment, a plurality of storage compartments therein, each having on its interior a wall spaced from its main wall, terminating above the bottom and below the top of the storage compartment and forming with the main wall a narrow passage of less capacity than the remaining interior of the storage compartment, whereby air circulation from top to bottom will be provided in that passage and from bottom upward through the storage compartment.

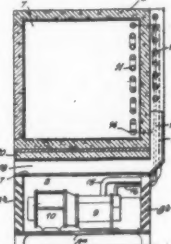
1,697,542. REFRIGERATING MACHINE. FRANK W. SCHWIMM, Chicago, Ill. Filed June 8, 1927. Serial No. 196,750. 11 Claims. (Cl. 62-115.)



1. Refrigerating apparatus comprising a mounting-plate having an aperture therethrough, a compressor supported on said plate and having a crank-case depending through said aperture, a refrigerant-receiving cooling-coil connected with and encircling the upper portion of said compressor, a water-jacket enclosing the compressor, coil and crank case and comprising upper and lower jacket-members between which said mounting-plate is interposed, and means securing together said jacket-members and interposed mounting-plate.

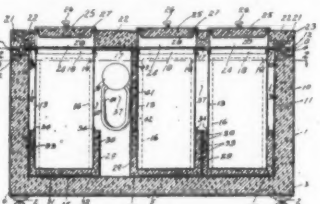
## Issued Jan. 8

1,698,122. REFRIGERATING APPARATUS. ANTHONY H. COLLINS, Bronxville, N. Y., assignor to Chicago Pneumatic Tool Company, New York, N. Y., a Corporation of New Jersey. Filed Feb. 10, 1927. Serial No. 169,513. 31 Claims. (Cl. 62-116.)



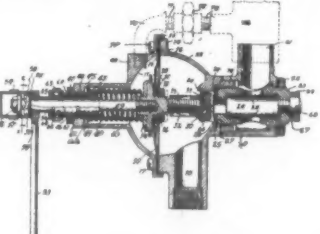
1. A self-contained refrigerating outfit providing a chamber from which heat is to be extracted, a compartment adjacent said chamber for at least part of the refrigerating apparatus, a wall of heat insulating material between said chamber and said compartment, and means providing an air chamber between said refrigerating chamber and said compartment adjacent said wall.

1,698,132. REFRIGERATING CABINET. DAVID JOHN GREILING, Cleveland Heights, Ohio, assignor to The Bishop Babcock Manufacturing Co., Cleveland, Ohio, a Corporation of Ohio. Filed Nov. 11, 1927. Serial No. 232,559. 5 Claims. (Cl. 62-75.)



1. In a refrigerating cabinet, the combination with an outer casing, a tank telescoped therein, a heat insulating lining interposed between the tank and the casing, an ice cream receptacle within the tank and a heat insulating boot rigidly secured to only the lower end of the receptacle, said receptacle with said boot being removable as a unit from the tank, said boot thermally shields the walls of the receptacle from the maximum chilling effect of brine contained within the tank exteriorly of the receptacle.

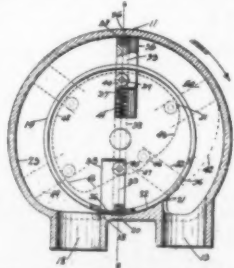
1,698,155. PRESSURE-RELEASE VALVE. FARMER DORSET, Wichita, Kans., and ROBERT D. MCINTOSH, River Forest, Ill., assignors to The Imperial Brass Manufacturing Company, Chicago, Ill., a Corporation of Illinois. Filed Aug. 12, 1921. Serial No. 491,051. 6 Claims. (Cl. 137-53.)



1. In a pressure operated release valve, the combination with a casing, of a diaphragm covering a chamber in said casing, an inlet to said chamber, an outlet for the chamber associated with said casing, a valve seat in said outlet, a valve co-operating with the seat, means for applying any desired pressure to the outside of the diaphragm, and threaded connections between the valve and the diaphragm comprising an internally threaded split sleeve carried by one of them deformed on to a threaded bolt on which it is screwed carried by the other.

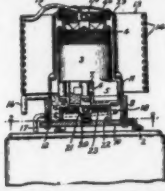
1,698,235. ROTARY PUMP. ALEXANDER MATRIS, New Orleans, La., assignor to Mathis R-S Pump Company, Denver, Colo., a Corporation of Colorado. Filed Dec. 20, 1924. Serial No. 757,182. 7 Claims. (Cl. 280-152.)

1. A rotary pump consisting of a casing, a breast mounted in the casing, a rotor mounted within the casing in intimate contact with the breast, said casing being provided on one side of said breast with a suction port and on the other side thereof with a discharge port, radially opposed vanes slidably mounted within the rotor and equipped with cam rollers, an inwardly inclined cam formed in each end of the casing the terminals of which



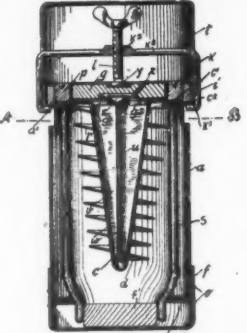
are so proportioned along the arc of travel of the aforesaid cam rollers that the outer ends of the advancing vane will not break contact with the inner periphery of the casing on the discharge side of the stroke before the following vane has been restored to contact with the casing periphery and closed the suction port.

1,698,306. REFRIGERATING MACHINE. EDWIN H. HULL, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Feb. 5, 1927. Serial No. 166,220. 3 Claims. (Cl. 62-115.)



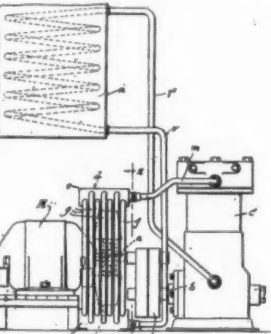
1. A refrigerating machine comprising an operating mechanism including a motor and a refrigerant compressor connected to be driven thereby, a casing completely enclosing the mechanism and forming a chamber for the compressed refrigerant, and resilient means for supporting the mechanism in the casing in spaced relation with the walls thereof.

1,698,352. ICE APPARATUS. WILHELM HANNING and FRANK GADKE, Hamburg, Germany. Filed May 18, 1927. Serial No. 192,436, and in Germany Sept. 1, 1926. 6 Claims. (Cl. 62-94.)



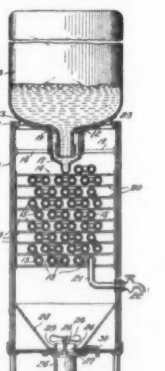
1. A refrigerating apparatus including an insulating receptacle open at both ends, a material receiving tank arranged within the receptacle and adapted to seal one end thereof, and means for removably sealing the opposite end of the insulating receptacle to provide a closed space in said receptacle exteriorly of the material tank for the reception of the refrigerating chemicals.

1,698,350. REFRIGERATING APPARATUS. ROSCOE R. STITT, Detroit, Mich., assignor to Stitt Refrigeration Company, Detroit, Mich., a Corporation of Michigan. Filed May 1, 1924. Serial No. 710,229. 3 Claims. (Cl. 62-116.)



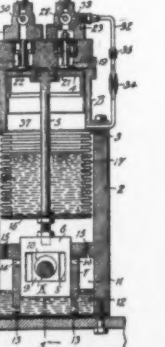
1. In a refrigerating apparatus, the combination of a compressor, a source of power, means for connecting a compressor in driving relation with the source of power, said compressor being positioned adjacent said source of power, a condenser positioned between said compressor and source of power to thereby form a compact unit, and a fan positioned within the said condenser having blades arranged to direct two separate cooling air currents, one radially and directly against the condenser and the other transversely to the radial air currents, and directly onto the compressor.

1,698,386. WATER COOLER. CHARLES S. BATDORF, Brooklyn, N. Y. Filed Mar. 4, 1927. Serial No. 172,705. 9 Claims. (Cl. 62-155.)



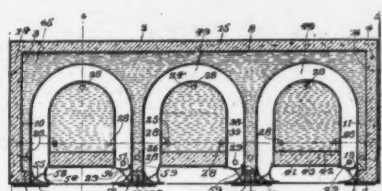
1. In a liquid cooler, the combination of an enclosure, a plurality of permeable pipes arranged transversely in the same for the flow of a liquid to be cooled and having a controlled outlet, and means for positively generating a flow of air through the enclosure and around the pipes, the enclosure being substantially free from any obstruction to the flow of air to the pipes.

1,698,440. REFRIGERATING APPARATUS. JOSEPH W. JONES, New York, N. Y. Filed Aug. 12, 1926. Serial No. 128,893. 10 Claims. (Cl. 230-211.)



1. In a refrigerating apparatus, a pump comprising a cylinder open at one end, a piston in said cylinder, a piston rod extending from the piston through the cylinder, a disc fixed on the rod beyond the open end of said cylinder, and a flexible, corrugated, tubular, metal wall connecting said disc and open end of said cylinder, the end of said flexible wall opposite said disc being also open, whereby said cylinder, flexible wall, piston, and disc form a chamber surrounding said rod.

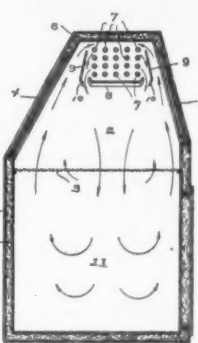
1,698,466. SOFT-DRINK COOLER. DANIEL R. ARNOLD, Philadelphia, and WILLIAM E. KUPF, Pottstown, Pa. Filed Nov. 3, 1927. Serial No. 230,858. 12 Claims. (Cl. 312-38.)



1. A combined cooler and dispenser for bottled beverages comprising a plurality of superposed, interchangeable, communicating separable refrigerant containing sections, each provided therein with one or more hollow, vertically disposed, semi-oval, bottle receiving, storing and dispensing elements extending into the refrigerant contained in the section, said element providing a slide passage for the bottles having normally closed intake and delivery ends at the front of the section.

1,698,502. REFRIGERATOR DISPLAY CASE. CLEMENT V. HILL, Trenton, N. J. Filed Dec. 10, 1927. Serial No. 239,142. 1 Claim. (Cl. 62-37.)

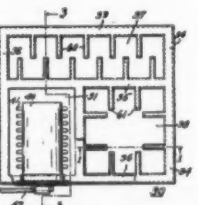
In a refrigerator show case, having a glass front and glass doors at the rear, a mechanical refrigeration means positioned near the top of the case, a drip pan under said means and a baffle plate on each side of and spaced from said means and pan and converging toward each other from the bottom to the top, and also spaced from the front and rear walls of the case, a storage compartment in the bottom of the case, and a perforated display shelf over said com-



partment whereby warm air passes up to said means between the case walls and baffles and the cold air passes downward between the baffles into the case and storage compartment.

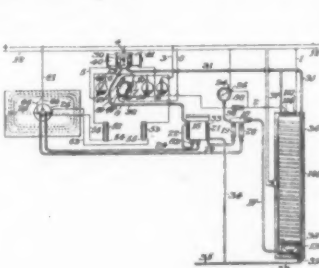
## Issued Jan. 15

1,698,510. REFRIGERATING APPARATUS. SIDNEY CLAIBORNE, Fort Worth, Tex., assignor, by means of assignments, to Frigidaire Corporation, a Corporation of Delaware. Filed Apr. 30, 1927. Serial No. 187,928. 4 Claims. (Cl. 62-95.)



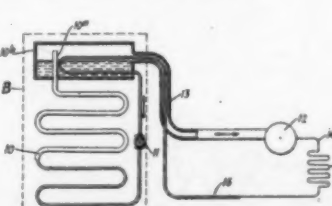
1. Refrigerating apparatus comprising a shell tank having hollow walls adapted to form a narrow chamber and adapted to contain a refrigerating medium, said walls being arranged to form a flue and a heat absorbing member extending into said flue, said member being hollow and communicating with said chamber.

1,698,547. METHOD OF AND APPARATUS FOR PRODUCING REFRIGERATION AND CHEMICAL COMPOUNDS USEFUL THEREIN. FREDERICK G. KEYES, Cambridge, Mass., assignor, by means of assignments, to National Refrigerating Company, a Corporation of Massachusetts. Filed July 24, 1925. Serial No. 45,947. 6 Claims. (Cl. 62-178.)



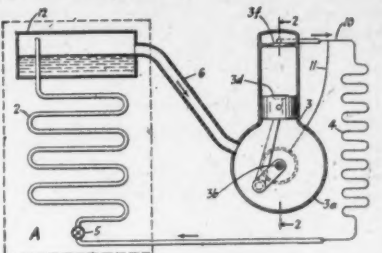
1. Method of refrigeration, utilizing absorption material capable of forming with a refrigerant fluid definite addition compounds of higher and lower order, characterized by confining the alternating stages of emission and absorption of said refrigerant fluid from and by said material between the limits represented by assumption by said material in its entirety of the condition of higher-order addition compound, on the one hand, and of lower-order addition compound, on the other hand.

1,698,938. PROCESS OF TRANSFORMING HEAT. RANSOM W. DAVENPORT, Detroit, Mich., assignor to Chicago Pneumatic Tool Company, New York, N. Y., a Corporation of New Jersey. Filed Feb. 2, 1926. Serial No. 85,580. 11 Claims. (Cl. 62-178.)



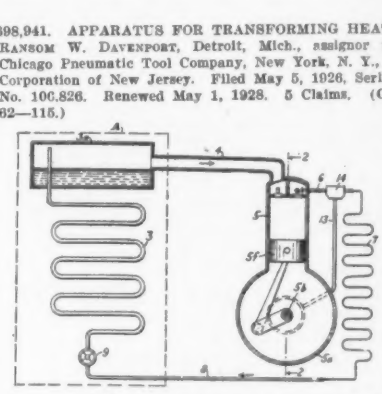
1. The process of transforming heat with a working substance having lubricant mixed therewith which comprises evaporating a body of the lubricating working substance to absorb heat and to produce concentration of the lubricant, moving the concentrated working substance from the heat absorbing zone and subjecting it to heat to still further increase the concentration of lubricant, compressing the vapor and concentrated lubricant to a higher total pressure, diluting the concentrated lubricant by condensing the vaporized portion of the working substance, again vaporizing the diluted mixture, and continuously repeating the aforesaid operations.

1,698,939. REFRIGERATING APPARATUS. RANSOM W. DAVENPORT, Detroit, Mich., assignor to Chicago Pneumatic Tool Company, New York, N. Y., a Corporation of New Jersey. Filed Mar. 18, 1926. Serial No. 95,531. 15 Claims. (Cl. 62-115.)



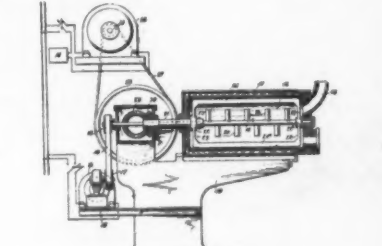
1. In a heat transforming system of the closed cycle type having compressing and condensing means in which a lubricant is diluted with a solvent working fluid while ejecting heat, means for absorbing heat comprising a series of vessels arranged and connected to form a fractional still, means for feeding dilute fluid from said condensing means into the first of said series, and means for feeding concentrated liquid by gravity from the last of the series into said condensing means, while vapor is being taken from said vessels into said condensing means.

1,698,940. APPARATUS FOR THE TRANSFORMING OF HEAT. RANSOM W. DAVENPORT, Detroit, Mich., assignor to Chicago Pneumatic Tool Company, New York, N. Y., a Corporation of New Jersey. Filed May 5, 1926. Serial No. 106,825. 5 Claims. (Cl. 62-115.)



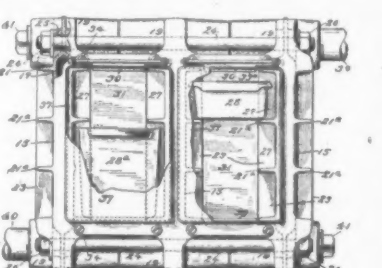
1. In a heat transforming system of the closed cycle type utilizing a lubricating working substance, a concentrating evaporator, a condenser, a compressor withdrawing vapor and concentrated lubricant from said evaporator, a discharge connection from said compressor to said condenser, said compressor having a crank shaft projecting therefrom, sealing means for said shaft, and means conducting concentrated lubricant from said connection to said sealing means.

1,698,170. APPARATUS FOR PRODUCING FROZEN-FOOD PRODUCTS. GROVER D. TURNBOW, Davis, Calif., assignor of one-half to Chester Earl Gray, Oakland, Calif. Filed Nov. 13, 1926. Serial No. 148,294. 6 Claims. (Cl. 62-114.)



1. In an apparatus for producing ice cream, the combination of a container, means for charging said container with a mixture to be frozen, means for partially freezing the water content of the mixture, means for agitating the mixture while being frozen without substantially affecting the viscosity of the mixture, and means operable independently of said agitating means for incorporating air in the mixture, and means for discharging the frozen, aerated mixture from the container.

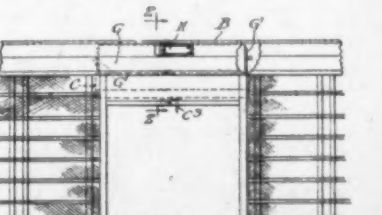
1,699,513. REFRIGERATING APPARATUS. LEWIS W. EGGLESTON, Buffalo, N. Y., assignor to American Radiator Company, New York, N. Y., a Corporation of New Jersey. Filed Apr. 30, 1926. Serial No. 105,671. 23 Claims. (Cl. 62-95.)



22. In an apparatus of the character specified, a wall element having a passage therein to permit of the circulation of a cooling medium therethrough, and registering ribs projecting horizontally from the opposite sides of said wall element adapted to register with corresponding ribs of contiguous elements for supporting thereon an object to be cooled, substantially as specified.

## Issued Jan. 22

1,699,525. POULTRY CAR. ISRAEL V. EGGLESTON, Chicago, Ill., assignor to Palace Poultry Car Company, Chicago, Ill., a Corporation of Illinois. Filed Sept. 26, 1925. Serial No. 58,704. 2 Claims. (Cl. 62-37.)

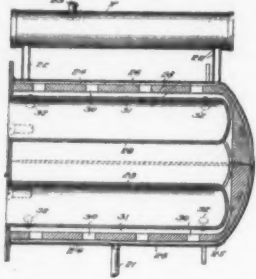


1. A car of the character described, having end compartments and a central compartment and a longitudinally extending raised portion or clearestory above its roof, said car being provided with a chamber located above said central compartment and extending into said clearestory and having doors at its ends below the roof adapted, when opened, to permit flow of air therethrough from one end compartment to the other.



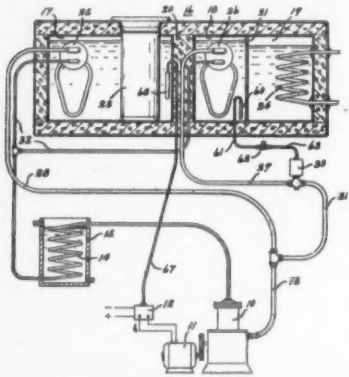
# From the Official Gazette of the United States Patent Office

1,699,564. **ELECTRIC REFRIGERATING APPARATUS.** CLARENCE M. DAVISON, Baltimore, Md., assignor to Poole Engineering and Machine Company, Baltimore, Md., a Corporation of Maryland. Original application filed June 12, 1926, Serial No. 115,532. Divided and this application filed Jan. 15, 1927. Serial No. 161,323. 7 Claims. (Cl. 62-95.)



3. In a cooling unit for refrigerating systems, a container having a series of cavities therein for the articles to be chilled and refrigerating medium conducting passages surrounding said cavities, and means of high thermo-capacity and low conductivity surrounding said cavities and passages adapted to have its temperature lowered by the refrigerating medium, whereby heat units may be absorbed by said means after circulation of the refrigerating medium has ceased.

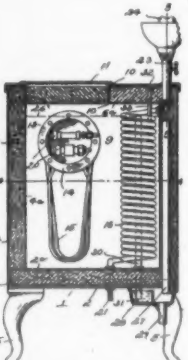
1,699,576. **REFRIGERATING APPARATUS.** HERBERT W. WOLVERTON, Dallas, Tex., assignor to Frigidaire Corporation, a Corporation of Delaware. Filed Nov. 12, 1925. Serial No. 68,700. 1 Claim. (Cl. 62-3.)



A refrigerating apparatus having a compartment to be cooled, means for cooling said compartment comprising a chamber disposed within said compartment for receiving a cooling medium, inlet and outlet pipes for conducting the cooling medium to and from said cooling chamber, and means responsive to the temperature in said compartment for varying the flow of the cooling medium in said outlet pipe, said last mentioned means comprising a gas pressure bulb within said compartment, an expandable chamber associated with said outlet pipe, and a conduit connecting said bulb with said last mentioned chamber.

1,699,613. **WATER COOLER.** DAVID H. EINHORN, Columbus, Ohio, assignor to The D. A. Ehinger Sanitary Mfg. Co., Columbus, Ohio, a Corporation of Ohio. Filed Oct. 16, 1926. Serial No. 141,927. 2 Claims. (Cl. 62-141.)

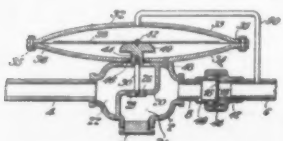
1. In a water cooler, a casing comprising spaced inner and outer walls separated by a heat insulating filler, said walls serving to define an enclosed liquid containing tank, a mechanical refrigerating unit disposed within said tank, a water cooling coil mounted within said tank and provided with means for admitting of the circulation of water therethrough independently of the liquid contained in said tank, a drinking fountain connected with the upper portion of said coil and arranged to project above the top of said casing adjacent to one side of the latter, a drip basin carried by the bottom of said casing, an overflow pipe arranged



vertically within said tank and opening into said basin, and a waste pipe leading from said fountain to said drip basin.

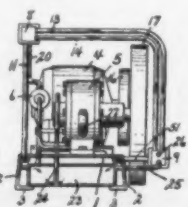
1,699,676. **FLUID-CONTROLLING MECHANISM.** EARL S. RYAN, Bartlesville, Okla., assignor, by mesne assignments, to Doherty Research Company, New York, N. Y., a Corporation of Delaware. Filed Nov. 10, 1926. Serial No. 425,196. 5 Claims. (Cl. 50-10.)

5. A maximum demand fluid regulator, comprising a valve normally wide open, means for actuating the valve upon an abnormal increase in flow beyond a predetermined maximum, including a removable restricted orifice not ac-



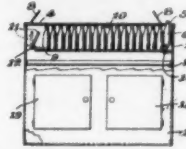
cessible to the user, and a diaphragm subject to the differential pressure between the two sides of the orifice, substantially as described.

1,699,681. **REFRIGERATOR.** EUGENE L. BARBER, Watertown, N. Y., assignor to The Barber Asphalt Company, Philadelphia, Pa., a Corporation of West Virginia. Filed May 22, 1925. Serial No. 82,173. 13 Claims. (Cl. 62-116.)



1. A refrigerating apparatus comprising a compressor structure and condenser tubes connected with the discharge side of said compressor extending in parallel along the top of the compressor and downwardly along one end of the latter to form a protective covering for the apparatus.

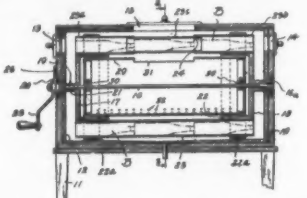
1,700,060. **BOTTLE-DISPENSING MACHINE.** CARL WALDO KIRKMAN, Harrisonburg, Va. Filed Jan. 12, 1927. Serial No. 160,677. 8 Claims. (Cl. 312-36.)



1. A bottle dispenser comprising a cabinet, a magazine therein, a pusher element in said magazine, said pusher element mounted on a crank arm, said crank arm mounted in said cabinet, a link member attached at the rear end of said crank arm, a rod attached to said member at right angles to said crank arm, a second link attached at the other end of said rod, and an arm parallel with said crank arm attached to said second link member, an ejector mounted on said parallel arm.

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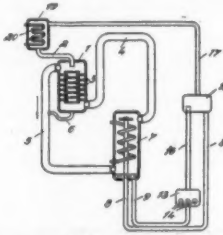
1,700,218. **BOTTLE COOLER.** CARL E. EISENSTADT, Scranton, Pa. Filed July 21, 1927. Serial No. 207,846. 8 Claims. (Cl. 312-36.)



1. In a bottle cooler, a casing, a cylindrical bottle carrier journaled for rotation in said casing, and comprising a circular series of bottle compartments, means to introduce a cooling medium into the casing for cooling the bottles carried by the carrier, and means to introduce a fresh or warm bottle of drink into any selected compartment and for delivering from the same in the same direction a bottle already cooled, the introduction and delivery of the bottle being in a direction parallel to the axis of the carrier.

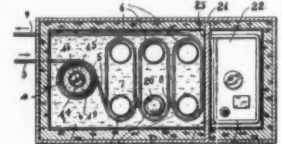
1,700,276. **ABSORPTION MACHINE.** EDMUND ALTENKIRCH, Alt-Landsberg-Süd, Germany, assignor to Sie menshuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a Corporation of Germany. Filed Oct. 17, 1927. Serial No. 226,768, and in Germany July 29, 1926. 5 Claims. (Cl. 62-119.)

1. Absorption machine comprising an evaporator, an absorber, a gas exhaust port in said evaporator, a mixture of an absorbable gas and a non-absorbable gas of different gravities arranged for circulation between said evaporator and said absorber, a conduit for said mixture leading from the upper part of said absorber to the lower part of said evaporator, the highest point of said conduit being



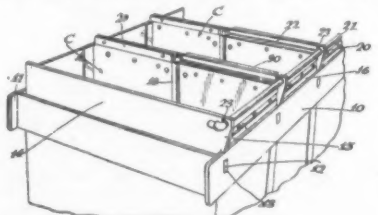
disposed at a higher level than the gas exhaust port of said evaporator and a second conduit leading from said gas exhaust port to said absorber.

1,700,335. **REFRIGERATING APPARATUS.** ERNEST W. RAICHE, Los Angeles, Calif., assignor to Raiche Manufacturing Company, Los Angeles, Calif. Filed June 20, 1927. Serial No. 200,073. 2 Claims. (Cl. 62-101.)



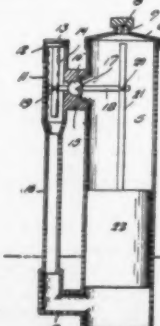
1. A refrigerating apparatus consisting of a common housing incasing an ice cream freezing unit, a hardening unit, and a cooling unit, the ice cream freezing unit and the hardening unit being encircled by a common cooling coil consisting of distinct coil sections with the coil section that encircles the hardening unit following and continuing from the coil section that encircles the freezing unit and the whole coil embedded in a common refrigerant, and the cooling unit having a cooling coil in communication with said refrigerant.

1,700,359. **CAN GROUP FOR ICE MANUFACTURE.** STEWART E. LAUER, Los Angeles, Calif., assignor, by mesne assignments, to York Ice Machinery Corporation, York, Pa., a Corporation of Delaware. Filed Mar. 30, 1926. Serial No. 98,512. 6 Claims. (Cl. 62-159.)



1. A can group frame for the purpose of supporting cans used in ice manufacture comprising two longitudinal side members, and transverse members connecting the side members, said transverse members having tongues extending through the longitudinal members and portions bearing against the top edge of one of said longitudinal members, said portions having apertures therein adapted to receive an air supply pipe for the purpose described.

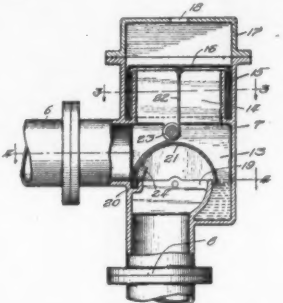
1,700,560. **FLOAT-CONTROLLED VALVE.** DANIEL HENRY LEE, East St. Louis, Ill. Filed Dec. 5, 1927. Serial No. 237,527. 1 Claim. (Cl. 137-104.)



In combination, a cylinder, a float having a slideable

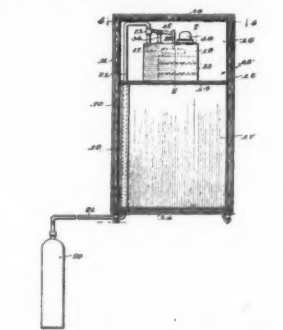
fit in the cylinder, an elbow projecting laterally from the lower end of the cylinder, a tube rising from the elbow, a valve seatable on a seat in the tube, a stem depending from the valve in the tube, a block connecting the tube with the upper portion of the cylinder and bored out to provide a ball socket, a ball in the socket, a rocker arm mounted on the ball, means for pivotally engaging the rocker arm with the valve stem, a stem rising from the float, and means for pivotally engaging the float stem with the rocker arm.

1,700,362. **PREVENTION OF EVAPORATION LOSSES.** HAROLD V. ATWELL, Whiting, Ind., assignor to Standard Oil Company, Whiting, Ind., a Corporation of Indiana. Filed Apr. 1, 1927. Serial No. 180,821. 6 Claims. (Cl. 137-53.)



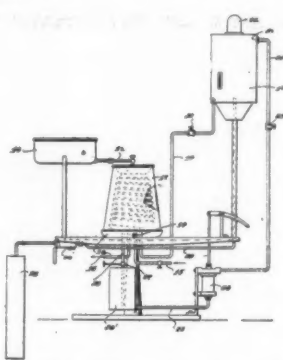
1. A valve structure comprising a chamber, a conduit leading into said chamber, an outlet from said chamber, vertical walls around said outlet forming a channel for sealing liquid, an inverted cup over said outlet having a skirt depending into said channel, a second outlet from said chamber, a liquid-sealed semicylindrical valve axially mounted to control said second outlet, and means connecting said inverted cup to said valve to effect operation thereof from the movement of the inverted cup.

1,700,429. **REFRIGERATING METHOD AND APPARATUS.** SETH L. BRIGHT, Detroit, Mich., assignor to G. F. Lathrop and John J. Dodge, Detroit, Mich. Filed Aug. 20, 1927. Serial No. 214,392. 11 Claims. (Cl. 62-178.)



1. The method of refrigeration which consists in discharging a refrigerant into a brine solution to freeze the brine solution, and controlling the discharge of the refrigerant by the change in volume of the brine solution to its freezing.

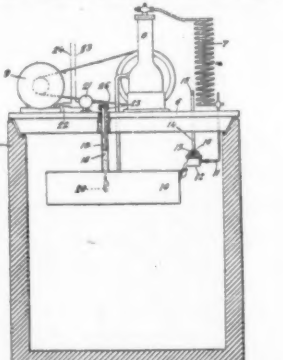
1,700,430. **METHOD AND APPARATUS FOR COOLING LIQUIDS.** SETH L. BRIGHT, Detroit, Mich., assignor to G. F. Lathrop and John J. Dodge, Detroit, Mich. Filed Aug. 20, 1927. Serial No. 214,394. 8 Claims. (Cl. 62-177.)



1. In a device of the class described, the combination with a container, of means for admitting a first cooling medium into the container to initially cool the same, and means operable after the completion of the initial cooling for admitting a second cooling medium into the container for further cooling the same.

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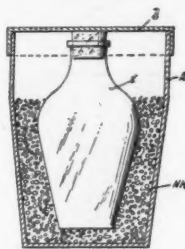
1,700,770. **REFRIGERATING SYSTEM.** GEORGE W. MASON, Detroit, Mich., assignor to Copeland Products, Inc., Detroit, Mich., a Corporation of Michigan. Filed Apr. 5, 1926. Serial No. 99,633. 4 Claims. (Cl. 62-116.)



1. In a refrigerating mechanism, a cabinet, a heat absorber within said cabinet, a heat dissipator on the outside of said cabinet operatively connected to said heat absorber, a tank surrounding said heat absorber, a filter tube for said tank projecting through a wall of said cabinet, control mechanism for said heat dissipator on the outside of said cabinet, actuating means for said control mechanism located on the inside of said cabinet, and a connection between said control mechanism and said actuating means extending through said filter tube.

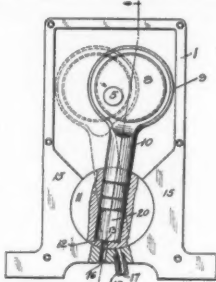
1,700,818. **DEVICE FOR COOLING.** PETER SCHLUM BORN, Berlin, Germany. Filed Feb. 13, 1928. Serial No. 254,045, and in Germany Feb. 15, 1927. 2 Claims. (Cl. 62-94.)

1. A device for cooling by means of solutions of freezing salts, comprising an air and water-tight receptacle containing a pre-determined amount of the dry freezing salts, this receptacle forming at the same time the storage vessel for the salts and the cooling vessel for receiving the salt solution and the article to be cooled, and being so



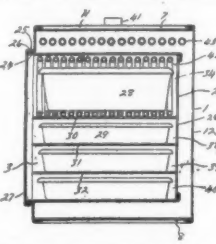
dimensioned that the volume of its interior is equal to the sum of the volumes of the article to be cooled and of the salt solution, formed when the exact quantity of water required for dissolving the salt is poured in.

1,701,003. **COMPRESSION PUMP.** ELMER HARR and WALTER HARR, Wallace, Idaho. Filed Jan. 4, 1928. Serial No. 244,520. 1 Claim. (Cl. 230-175.)



register an opening in the said casing connected to the interior of the cylinder bore with inlet and exhaust openings in the casing.

1,701,170. **BRINE TANK.** HAROLD A. GREENWALD and FRED J. HEIDEMAN, Detroit, Mich., assignors to Thomas C. Whitehead, Detroit, Mich. Filed Jan. 17, 1927. Serial No. 161,682. 10 Claims. (Cl. 62-96.)



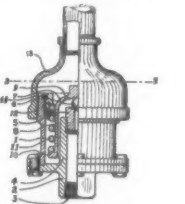
1. In a brine tank, the combination with a casing containing fluid having a low freezing point, of a casing with the casing aforesaid having a plurality of chambers for receptacles for food, and expansion means in one of said chambers.

1,701,277. **VALVE DEVICE FOR RESPIRATORS OR THE LIKE.** HARRY F. SHINDLER, Reading, Pa., assignor to Wilson Products, Inc., Reading, Pa., a Corporation of Pennsylvania. Filed Feb. 18, 1927. Serial No. 109,215. 1 Claim. (Cl. 251-116.)



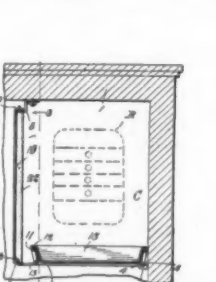
In combination with a chamber-enclosing respirator-wall or the like having a discharge aperture with a surrounding valve-retaining boss; a valve device comprising a flap-valve seating upon said boss, and a valve-retaining cap having an annular flange with spaced apart boss-engaging portions having valve-contacting offsets and intervening portions of enlarged diameter having air-escape notches.

1,701,305. **SAFETY VALVE.** SIDNEY E. MEYERS, Buffalo, N. Y., assignor to National Aniline & Chemical Co., Inc., New York, N. Y., a Corporation of New York. Filed Aug. 6, 1925. Serial No. 48,507. 8 Claims. (Cl. 137-53.)



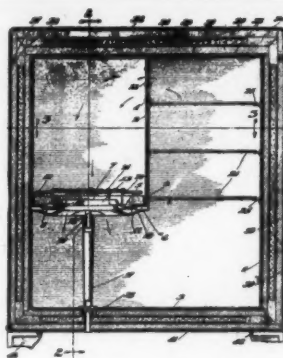
1. A safety valve comprising in a ball, a seat for said ball, said seat having an orifice therein, a member, said seat and member having concave surfaces contacting the ball for maintaining it over the orifice, said member having a portion extending beyond and enveloping said seat, and means acting on the extended portion of the member for drawing said ball to its seat.

1,701,422. **REFRIGERATOR CONSTRUCTION.** RUDOLPH A. REEK, Rhinelander, Wis. Filed Mar. 28, 1927. Serial No. 179,051. 2 Claims. (Cl. 62-89.)



1. The combination with a refrigerating unit and a casing therefor, of a rack detachably supported within the casing below the unit, a partition detachably suspended within the casing at one side of the unit, means upon the rack for anchoring and partly supporting the partition, and a pan mounted upon the rack.

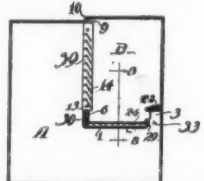
1,701,463. **REFRIGERATOR.** JOHN B. KNAUSS, Portsmouth, Ohio, assignor to The Portsmouth Mower & Range Company, Portsmouth, Ohio, a Corporation of Ohio. Filed Apr. 14, 1927. Serial No. 188,578. 18 Claims. (Cl. 62-51.)



1. A drainage means for a refrigerator, comprising, an ice compartment, duplicate drainage surfaces at the base of said ice compartment, said surfaces disposed one above the other, and a ledge intermediate said drainage surfaces for supporting the upper drainage surface and directing any moisture escaping past the same onto the lower surface.

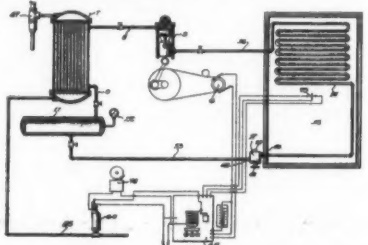
Issued Feb. 12

1,701,525. **REFRIGERATOR.** GERNARD C. BOHN, St. Paul, Minn. Filed Feb. 23, 1926. Serial No. 89,962. 10 Claims. (Cl. 62-89.)



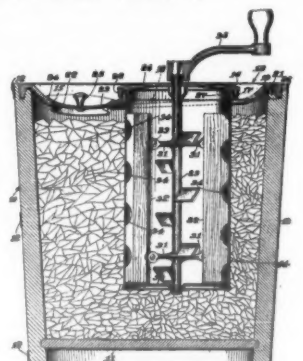
1. A refrigerator lining, comprising a unitary refrigerating compartment, a separate unitary the chamber supported within said compartment and above the bottom of the same, the meeting vertical edges of said compartment and ice chamber overlapping, a partition wall separating said refrigerating compartment and ice chamber, a supporting end of said partition wall covering the overlapping edges of said refrigerating compartment and ice chamber, and means securing said supporting end of the partition wall to and through said overlapping edges of compartment and chamber.

1,701,753. **REFRIGERATING APPARATUS.** JUSTUS C. GOOSMANN, Chicago, Ill. Filed Feb. 12, 1928. Serial No. 618,454. 6 Claims. (Cl. 62-4.)



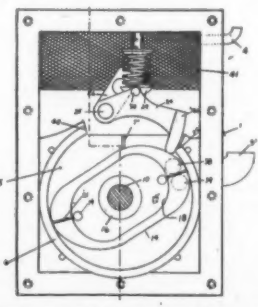
1. In a refrigerating apparatus, the combination with a compressor, a condenser and an evaporator connected in series, of thermostatic means for automatically controlling the condenser pressure and means controlled solely by condenser pressure for regulating the delivery of refrigerating medium to said evaporator.

1,701,764. **ICE-CREAM FREEZER.** ALFRED L. ROBBUCK, Winchendon, Mass. Filed Apr. 28, 1927. Serial No. 187,381. 6 Claims. (Cl. 220-9.)



4. An ice cream freezer, comprising in combination, a cream can, a tub, a closure for the upper end of the tub provided with a can receiving opening positioned to mount the cream can eccentrically within the tub to provide an enlarged space between a wall of the tub and the can, and said closure being provided with an ice receiving opening within said enlarged space and a concave upper surface that drains into said opening.

1,701,792. **PUMP.** GEORGE F. NELSON, Berkeley, Calif. Filed June 20, 1927. Serial No. 189,910. 4 Claims. (Cl. 230-149.)



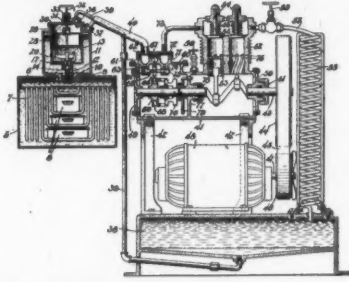
1. In a pump a housing adapted to contain a lubricating fluid and having intake and discharge openings, a substantially cylindrical pump chamber mounted within the housing and opening through the upper side of its arcuate wall into the housing, which chamber is provided through one end thereof with an intake opening communicating with the intake opening of the housing, said chamber also having an oil intake opening through one end wall thereof, a rhomboid-ovate impeller rotatably mounted within the chamber and having a working fit at its ends and on its opposite sides with the arcuate wall and the end walls of the chamber, which impeller is provided with an oil chamber therein communicating with the oil intake opening of said pump chamber, said impeller also having a passage extending from the oil chamber and opening at the periphery thereof and a shutter yieldingly held in sealing engagement with the periphery of said impeller and with one end of the arcuate wall of the chamber, the ends of said shutter also engaging the end walls of the chamber.



## Record of Refrigeration Patents Issued Jan. 1 to Mar. 5, 1929 (continued)

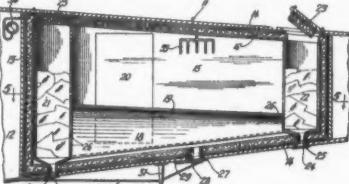
## Issued Feb. 12

1,702,145. REFRIGERATING SYSTEM. SIDNEY E. WILSON, Laurel, Miss. Filed July 15, 1926. Serial No. 122,632. 4 Claims. (Cl. 62-95.)



1. In a refrigerating system, a condenser, a low pressure chamber having an upwardly projecting neck, a casing above said chamber and connected with said neck and having an outlet port in its top, an inner casing having walls spaced from the walls of the first-mentioned casing and having an inlet port in its top, a valve cage in the bottom of said inner casing and having a conduit leading therefrom through the neck into said chamber, a valve in said cage, and means controlling said valve to maintain the level of the liquid refrigerant normally within said neck.

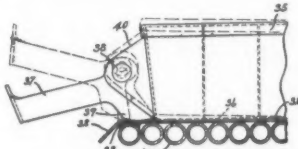
1,702,194. AIRCRAFT REFRIGERATOR. GEORGE F. BOSCH, Mount Vernon, N. Y. Filed Aug. 10, 1928. Serial No. 298,774. 1 Claim. (Cl. 62-62.)



In a refrigerator built into the fuselage of aircraft, a cold air storage compartment, doors therein for access thereto, ice water jackets partially surrounding said storage compartment, ice chambers for the storage of ice therein and having communication with said water jackets to allow melted water from the ice to enter said water jackets, and doors for gaining access to said ice chambers.

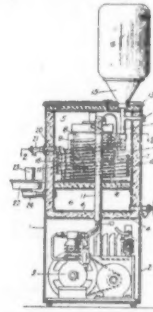
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1,702,529. REFRIGERATING APPARATUS. CLARENCE WARNER and HARRY B. HULL, Dayton, Ohio, assignors, by mesne assignments, to Frigidaire Corporation, a Corporation of Delaware. Filed Nov. 6, 1924. Serial No. 748,248. Renewed Nov. 27, 1926. 18 Claims. (Cl. 62-95.)



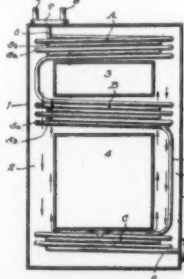
10. In refrigerating apparatus, a container to be cooled, cooling means in thermal contact with the container, means operatively connected to the container for removing the container from the cooling means, and means actuated by the removing means for separating the container from the cooling means.

1,702,560. WATER DISPENSER. DAVID H. EISINGER, Columbus, Ohio, assignor to The D. A. Eisinger Sanitary Mfg. Co., Columbus, Ohio, a Corporation of Ohio. Filed Nov. 11, 1927. Serial No. 232,607. 3 Claims. (Cl. 62-116.)



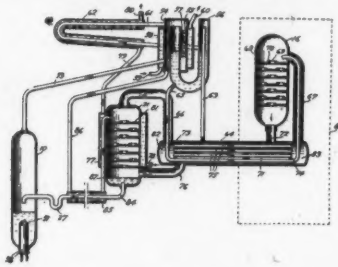
1. A mechanically refrigerated liquid dispenser, comprising a casing formed to include vertically disposed base, drain and refrigerating compartments, the walls of the refrigerating compartment being formed from heat insulating material, a motor and compressor unit disposed in the base compartment, a cooling unit in the refrigerating compartment, a liquid circulating coil in the refrigerating compartment, said coil having the inlet end thereof connected with a source of water supply, an exteriorly arranged valve controlled outlet for said coil, a receptacle arranged exteriorly of said casing below said outlet, and a conduit extending from said receptacle into said drain compartment.

1,702,644. BOILING COIL FOR BRINE TANKS OF REFRIGERATING APPARATUS. FRANK L. COOK, Louisville, Ky., assignor of one-half to S. D. Camper, Louisville, Ky. Filed Oct. 27, 1926. Serial No. 144,552. 5 Claims. (Cl. 62-95.)



5. In a refrigerating apparatus, the combination of a brine tank having an anti-freezing solution therein, a boiling coil of pipe for containing and conducting an expanding and heat-absorbing fluid submerged in said solution, all parts of said coil having a downward inclination toward the compressor to empty said coil of oil accumulations and the convolutions of said coils being arranged alternately and in staggered relation, whereby the brine is permitted to circulate between the convolutions of said coils.

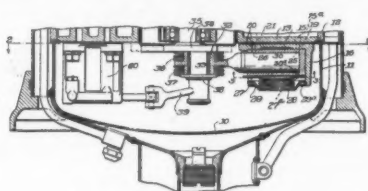
1,702,754. REFRIGERATION. KARL ALEXANDER WESSELAND, Stockholm, Sweden, assignor to Electrolux Serval Corporation, New York, N. Y., a Corporation of Delaware. Filed Apr. 13, 1927. Serial No. 183,905, and in Germany Oct. 9, 1926. 11 Claims. (Cl. 62-178.)



1. Absorption refrigerating apparatus comprising, in combination, a generator, a first condenser, an absorber, a second condenser, means to conduct liquid from said first condenser to said absorber and gas from said first condenser to said second condenser, an evaporator, means to conduct liquid from said second condenser to said evaporator, means to conduct gas from said evaporator to said absorber, means to conduct liquid from said absorber to said generator and means to conduct vapor from said generator to said first condenser.

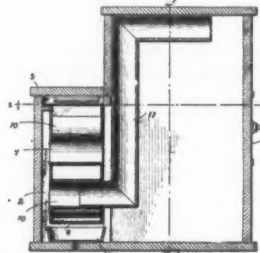
## Issued Feb. 26

1,703,108. COMPRESSOR CONSTRUCTION FOR REFRIGERATING DEVICES. RAMMUS M. HVID, Chicago, Ill. Original application filed July 6, 1925. Serial No. 41,767. Divided and this application filed July 20, 1925. Serial No. 44,778. 4 Claims. (Cl. 230-175.)



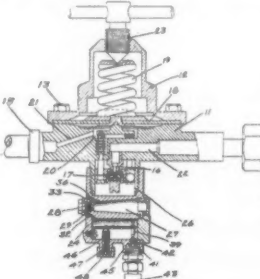
1. In compressor construction, the combination of a crank and a piston connected thereto, a cylinder casing having a circular cavity open at the bottom, a circular cylinder member mounted in said cavity for oscillation, a plate in said open bottom, a spring engaging said plate for holding the cylinder in place, and means for supporting said spring.

1,703,124. REFRIGERATOR. ESCER E. TURNER, Ocoee, Fla. Filed June 15, 1926. Serial No. 118,198. 1 Claim. (Cl. 62-6.)



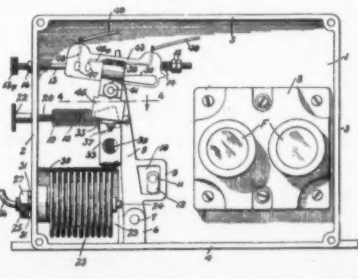
A refrigerator comprising a cabinet including juxtaposed cooling and storage chambers in free communication, an ice box in the cooling chamber, a plurality of pipes open at both ends extending horizontally through the ice box and through opposite walls thereof, and an upright pipe in the storage chamber adjacent the cooling chamber and having a branch at its upper end extending transversely along the top of the storage chamber, and having a branch at its lower end extending in an opposite direction to the upper branch and communicating with a lower pipe of the ice box, the cooling and storage chambers having a bottom in common and the cooling chamber terminating short of the upper end of the storage chamber and open at its top which is closed by means of a cover and the storage chamber having doors in its sides and transparent panels for observation.

1,703,160. FLUID-CONTROL VALVE. ELMER H. SMITH, Minneapolis, Minn. Filed Jan. 31, 1927. Serial No. 164,797. 6 Claims. (Cl. 50-10.)



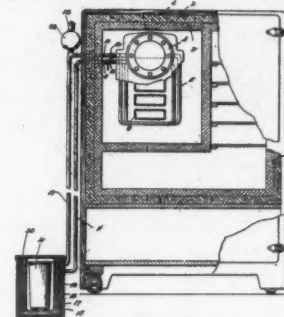
1. The combination with a fluid pressure regulating valve, comprising a casing having a lateral extension and a valve mechanism mounted in said extension of a warming device comprising a body provided with means for demountably securing it to said extension, said warming device having a heating means therein adapted automatically to maintain a portion of said valve casing extension

1,703,285. PRESSURE-CONTROL SWITCH. DELOS F. HEATH, Peoria, Ill. Filed July 29, 1926. Serial No. 124,190. 4 Claims. (Cl. 200-81.)



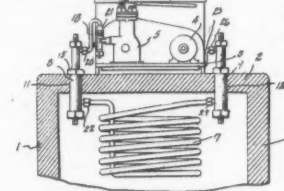
1. In a construction of the class described, a housing support having a base, a vertical side and a vertical end, said side at its lower portion near one end having an opening therethrough, an arm pivotally mounted at its lower end on said base, spring means acting on the arm to turn it in one direction, a corrugated metal bellows located in said housing opposite said opening in the vertical side thereof and having one end bearing against the lower portion of the arm and the opposite end secured to the adjacent vertical end of the housing whereby said bellows may be readily replaced or removed through said opening, and a cover detachably connected to the housing over said opening.

1,703,299. REFRIGERATING DEVICE. LLOYD G. COPELAND, Flint, Mich., assignor to Copeland Laboratories Company, Flint, Mich., a Corporation of Michigan. Filed Oct. 14, 1928. Serial No. 141,463. 4 Claims. (Cl. 62-95.)



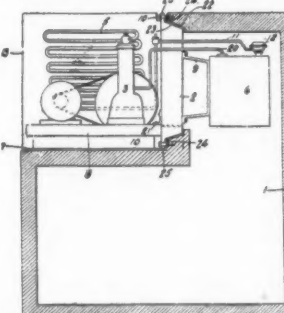
4. The combination with a refrigerator which includes a refrigerating cabinet equipped with a refrigerating mechanism having a container for refrigerant, of an auxiliary and independent chilling device positioned remote from the refrigerator cabinet, refrigerant coils in this auxiliary chilling device, conduits connecting the coils in the auxiliary chilling device with the refrigerant container of the refrigerating mechanism in the cabinet, and valve means in the conduits which are disposed in close proximity to the refrigerating mechanism in the cabinet, said valve means being operable to close the conduits together with the coils in the auxiliary chilling device to permit of normal independent operation of the refrigerator and being operable to open the conduits to effect operation of the auxiliary chilling device when elected.

1,703,311. REFRIGERATING APPARATUS. THOMAS J. LITTLE, Jr., Detroit, Mich., assignor to Copeland Products, Inc., Detroit, Mich., a Corporation of Michigan. Filed May 25, 1926. Serial No. 111,475. 7 Claims. (Cl. 62-116.)



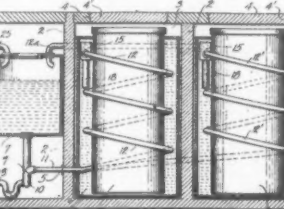
1. The combination of a refrigerator cabinet, a motor compressor and condensing coil of a refrigerating machine removably attached as a unit to the top of said cabinet, an expansion coil suspended within said cabinet and beneath the top thereof, a valvular connection between said compressor and said expansion coil and also between said condensing coil and said expansion coil, each of said connections comprising two needle valves positioned with their escapement vents meeting and opening into each other and adapted to permit the passage of liquid or gas from one valve to the other, a union attached to the meeting end of one of said valves and screwed over the meeting end of the other of said valves, said valvular connections being inserted through and closely fitted in openings in the top of said cabinet with the union connections thereof positioned above the surface of the top of said cabinet.

1,703,318. REFRIGERATOR CABINET. GLENN MUFFLEY, Detroit, Mich., assignor to Copeland Products, Incorporated, Detroit, Mich., a Corporation of Michigan. Filed Apr. 3, 1926. Serial No. 99,626. 8 Claims. (Cl. 62-116.)



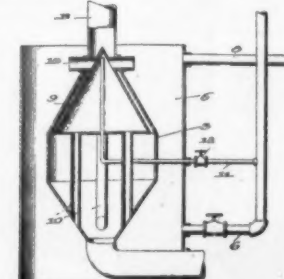
1. A refrigerator cabinet provided with a stepped upper surface the horizontal portions of which are separated from each other by a vertically disposed opening, a base on the lower of said portions, a door for said opening supported by said base, a heat absorbing element mounted on the inside of said door, heat dissipating mechanism mounted on said base, and means connecting said element and said mechanism, said element being removable through said opening without being disconnected from the mechanism.

1,703,351. REFRIGERATING APPARATUS. CLOYD E. MOLESWORTH, JOHN LUDMAN, and CARL G. ZORKEIT, Seattle, Wash. Filed Sept. 17, 1927. Serial No. 220,187. 8 Claims. (Cl. 62-101.)



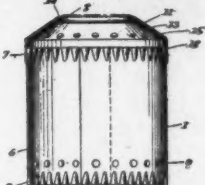
1. In a refrigerating system, a source of liquid refrigerant, an expansion coil into which said refrigerant may flow by gravity, heat dissipating mechanism mounted on said base, and means connecting said element and said mechanism, said element being removable through said opening without being disconnected from the mechanism.

1,703,366. CONDENSER. WALTER S. SHENEFIELD, South Bend, Ind. Filed July 14, 1927. Serial No. 205,656. 7 Claims. (Cl. 257-28.)



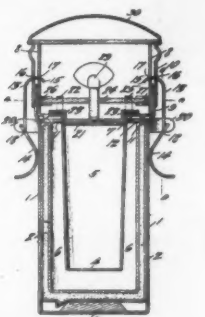
4. A condenser comprising a main cooling fluid reservoir, a vessel within said reservoir and having an inlet and outlet, the vessel being gradually constricted cross sectionally in the direction of said outlet and substantially merging therewith; an auxiliary cooling fluid reservoir within said vessel adjacent its inlet and spaced from its walls, and supply pipes communicating with said auxiliary reservoir and passing through the restricted vessel walls adjacent the vessel outlet whereby the fluid to be condensed will be forced to contact with said pipes adjacent the vessel outlet.

1,703,436. WATER COOLER. WILLIAM C. WIELAND, Los Angeles, Calif. Filed June 30, 1927. Serial No. 202,545. 8 Claims. (Cl. 62-91.)



1. In a device adapted to surround an olla to prevent direct air contact therewith, comprising an annulus, and means at ends of said annulus adapted to uniformly space said annulus from the periphery of said olla.

1,703,472. BLOCK OF ICE CYLINDER. MARTIN BUHSE, Hamburg, Germany. Filed Sept. 15, 1926. Serial No. 135,675. Renewed Nov. 24, 1928. 3 Claims. (Cl. 62-105.)

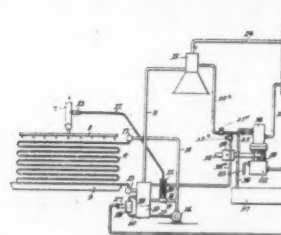


1. A refrigerating device including a refrigerant container, a material container adapted to be seated in the refrigerant container in spaced relation thereto, said material container extending above the refrigerant container and provided with an outwardly extending flange and an upstanding wall, a sealing gasket carried by the refrigerant container and adapted to be engaged by the outwardly extending flange of the material container; a closure for the container which overlies the outwardly extending flange, a gasket interposed between the closure and the outwardly extending flange, means including a bar having interlocking connection with the upstanding wall, and a screw between the bar and closure to clamp the latter to the material container, and means carried by the refrigerant container to engage the upstanding wall of the material container above the refrigerant container to clamp the material container in sealing cooperation with the refrigerant container.

## Issued March 5

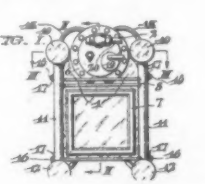
1,703,955. REFRIGERATING METHOD AND APPARATUS. THOMAS SHIPLEY, York, Pa., assignor, by mesne assignments, to York Ice Machinery Corporation, York, Pa., a Corporation of Delaware. Filed May 7, 1927. Serial No. 189,660. 18 Claims. (Cl. 62-170.)

1. The method of controlling the pressure on the high pressure side of a thermo-dynamic refrigeration circuit, which comprises alternately feeding and withdrawing refrigerant to and from the circuit to increase and reduce said pressure and automatically controlling said feeding and



withdrawal in accordance with condenser temperature, in such manner that an increase in temperature causes an increase in pressure.

1,704,080. REFRIGERATING APPARATUS. EUGENE L. BARNES, Buffalo, N. Y., assignor to The Barber Asphalt Company, Philadelphia, Pa., a Corporation of West Virginia. Filed July 20, 1926. Serial No. 123,641. 10 Claims. (Cl. 62-65.)



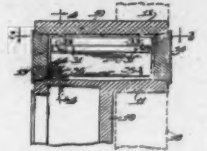
1. A refrigerating device of the character described comprising a cooling chamber, external banks of upright evaporating tubes against its sides, and headers above and below the upper and lower corners of said chamber connected to said tubes.

1,704,102. EVAPORATOR AND HOLD-OVER TANK. IRA H. REINDEL, Detroit, Mich., assignor to Norge Corporation, a Corporation of Michigan. Filed Apr. 25, 1927. Serial No. 186,556. 3 Claims. (Cl. 62-95.)



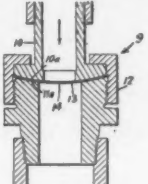
1. In a device of the class described, a header tank, a float controlled inlet valve therein adapted to maintain the liquid level therein, a series of evaporator tubes opening into said header tank to increase the evaporating surface thereof, and a hold-over brine tank positioned within said evaporator tubes and adapted to maintain a more even temperature therein, said brine tank being of substantially reduced diameter with respect to the space within the tubes in which it is disposed, and spacers carried by the tubes and engaging the tank whereby to permit free circulation around the tank and between the latter and the tubes.

1,704,113. REFRIGERATOR AND COMPARTMENT DEVICE THEREFOR. OTTO STURM, Dwight, Ill. Filed July 11, 1927. Serial No. 204,728. 14 Claims. (Cl. 62-49.)



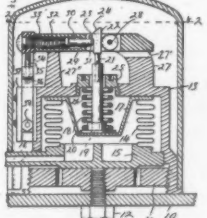
1. The combination with a refrigerator having walls forming a chamber provided with an inner and an outer doorway for access thereto and a door for each doorway, of means forming a housing-like open-ended receptacle for food articles in said chamber, the receptacle being of such length and being so positioned that its ends are adjacent to said doors respectively when the doors are closed.

1,704,177. HEAT-TRANSFORMING APPARATUS. RANSOM W. DAVENPORT, Detroit, Mich., assignor to Chicago Pneumatic Tool Company, New York, N. Y., a Corporation of New Jersey. Filed Feb. 28, 1927. Serial No. 171,466. 9 Claims. (Cl. 62-115.)



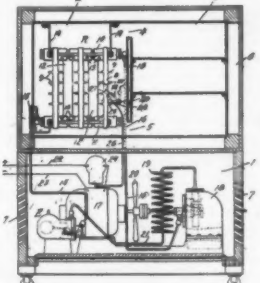
1. Apparatus for producing heat transforming effects comprising an evaporator, a pump, and a condenser connected together to form a closed cycle system, and a feeding device mounted in the connection between said condenser and said evaporator and having a feeding element, said device being demountable and arranged for interchangeable association with different feeding elements, thereby to vary the operating characteristics of the system.

1,704,191. PRESSURE-OPERATED SWITCH. FRED J. HEIDEMAN, Detroit, Mich., assignor of ninety per cent to Thomas C. Whitehead, River Rouge, Mich. Filed Sept. 21, 1925. Serial No. 57,792. 5 Claims. (Cl. 200-81.)



1. In a pressure operated circuit maker, a fluid pressure device comprising a casing, a switch associated with said casing, a cam member actuated by said device, contact arms carried by said casing at one side of the cam member, a switch arm having one end pivoted upon said casing at the other side of said cam member and having a roller at the opposite end thereof adapted to engage the contact arms aforesaid, and a spring influenced plunger carried by said arm and engaging said cam member for oscillating said arm.

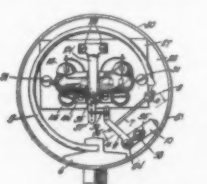
1,704,352. REFRIGERATING APPARATUS. ALFRED M. THOMSON, Newark, N. J., assignor to Joseph Mercandante, New York, N. Y. Filed Nov. 22, 1926. Serial No. 149,545. 9 Claims. (Cl. 62-4.)



1. In a refrigerating system, the combination of a refrigeration element, a cooling chamber enclosing said element, a temperature responsive device for controlling the operation of the refrigerating system, said device being arranged so that it is affected by both the temperature of the cooling chamber and the temperature of the refrigeration element, and means for varying the distance between said device and said element to change the relative effects produced thereon by said element and said chamber.

1,704,371. ELECTRIC SWITCH. LOUIS A. M. PHILLAN, Beloit, Wis., assignor, by mesne assignments, to Time-O-Stat Corporation, Elkhart, Ind., a Corporation of Maryland. Original application filed Sept. 22, 1924. Serial No. 739,006. Divided and this application filed Oct. 29, 1925. Serial No. 65,609. 8 Claims. (Cl. 200-81.)

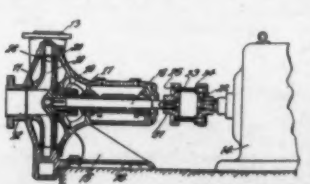
1. An electric switch comprising a mercury contactor tiltedly mounted upon a pivot, a pressure element adapted to tilt said contactor about its pivot for opening and closing an electric circuit through said contactor, and an adjustable connection loosely connected between said con-



tactor and said pressure element and independently mounted thereof for predetermining the effective operating pressure of said pressure element.

1,704,481. ROTARY MACHINE, PARTICULARLY IN CENTRIFUGAL PUMP. FRANK LAWACKE, Munich, Germany, assignor to Worthington Pump and Machinery Corporation, New York, N. Y., a Corporation of Virginia. Filed Aug. 17, 1926. Serial No. 129,678. 4 Claims. (Cl. 103-87.)

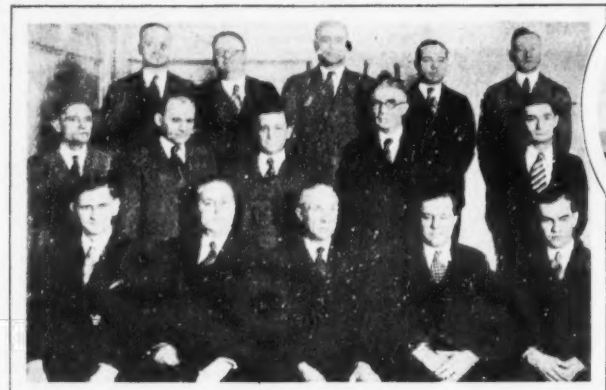
1. The combination, with a prime mover, of a rotating pump comprising an anchored casing section, a movable casing section detachably attached to said anchored casing section and movable longitudinally of the axis of the pump, said movable section carrying the pump impeller and driving shaft, and a coupling connecting the driving shaft and prime mover, said coupling constructed to permit, upon dis-



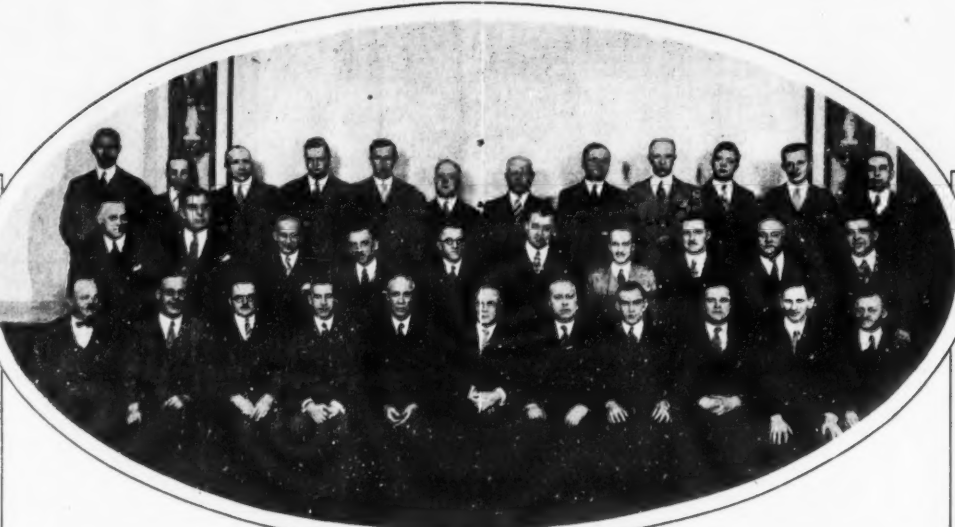
connection of coupling parts, movement of the movable casing section, longitudinally of the axis of the pump a distance equal to or greater than the depth of insertion of the impeller into the anchored section.



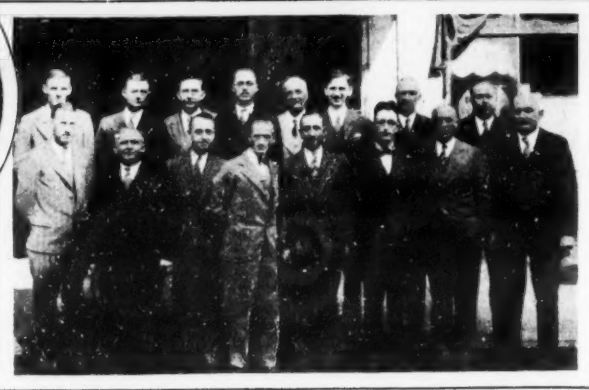
## McCray Refrigerator Men in Six District Sales Conventions



Above, KANSAS CITY. Left to right, Top Row: E. E. Mason, Des Moines, Iowa; E. M. Scully, Sioux City, Iowa; Herman F. Paul, Des Moines, Iowa; B. M. Birmingham, Kansas City, Mo.; T. F. Vossmeier, St. Louis, Mo. 2nd Row, Standing: W. H. Burdick, Sioux Falls, Iowa; C. A. Fulton, Fairfield, Iowa; H. L. Morrow, Kansas City, Mo.; J. H. Clark, Wichita, Kansas; V. F. Thatcher, Kansas City, Mo. Bottom Row, Seated: R. J. Rehwinkel, Kendallville; T. J. Murphy, Kansas City, Mo.; H. M. Stewart, Kendallville; J. T. Wassell, Kendallville; C. E. Hamilton, Kendallville.



Above, NEW YORK CITY. Left to right—Top Row: A. E. Reed, Binghamton, N. Y.; E. S. Dreisbach, Allentown, Pa.; MacMeekin, Wilkes Barre, Pa.; H. W. Baird, New York City; N. R. Warthen, Washington, D. C.; W. S. Hiller, Albany, N. Y.; D. E. Barry, Scranton, Pa.; A. V. Eckert, Washington, D. C.; W. B. Brown, Albany, N. Y.; George Hoos, Baltimore, Md.; Louis R. Rohrecker, New York City; Fred A. Frary, Watertown, N. Y. Center Row: W. K. Lampert, South Bend, Ind.; C. W. Toel, Chicago; A. R. Kyle, Philadelphia; E. Heppell, New York City; F. M. Ingersoll, Boston; E. W. Orrall, Boston; A. F. Dwyer, Boston; W. C. Nielsen, Boston; John Bartels, Syracuse, N. Y.; Hector S. Hill, Philadelphia. Bottom Row, Seated: Clarence Baler, New Brunswick, N. J.; E. W. Jones, Kendallville; Robert Johnston, New York City; J. W. Hart, Kendallville; H. M. Stewart, Kendallville; E. E. McCray, Kendallville; T. J. Murphy, Kansas City, Mo.; C. E. Hamilton, Kendallville; J. T. Wassell, Kendallville; R. J. Rehwinkel, Kendallville; J. B. Landis, Harrisburg, Pa.



Above, JACKSONVILLE, FLA. Left to right—1st Row: Charles W. Hughes, Jacksonville; A. Tallarino, Tampa; E. G. Tonkin, West Palm Beach; Frank J. Kelly, West Palm Beach; H. M. Tonkin, West Palm Beach; Todd Hyatt, Orlando; Howard Ross, Jacksonville; O. I. Ross, Orlando. 2nd Row: H. G. Burke, Tampa; George L. Dixon, Miami; E. O. Stanford, Tampa; W. W. Barber, Tampa; J. C. Pittman, Tampa; R. J. Rehwinkel, Kendallville; H. M. Stewart, Kendallville; T. J. Murphy, Kendallville.

Below, ATLANTA, GA. Left to right—1st Row: J. E. Brown, Mobile; E. Hogan, Memphis; R. J. Rehwinkel, Kendallville; B. A. Greenspan, Atlanta; C. E. Hamilton, Kendallville; H. M. Stewart, Kendallville; T. J. Murphy, Kendallville. 2nd Row: W. L. Boone, Greenville; F. E. Brown, Mobile; C. L. Miller, Booneville; W. F. McGuffie, Knoxville; F. S. Schmachtenberger, New Orleans; J. V. Cowart, Birmingham; C. H. Ragdale, Atlanta; J. T. Wassell, Kendallville. 3rd Row: B. A. Marras, Baton Rouge; W. C. Koonitz, Knoxville; Z. O. Jennings, Little Rock; C. C. Crim, Jackson, Miss.; W. A. Tadlock, Atlanta; S. J. Caldwell, Montgomery.



Above, RALEIGH, N. C. Left to right, Seated: M. Bobat, Richmond, Va.; John Watson, Charleston, W. Va.; L. B. Crosby, Raleigh, N. C.; T. J. Murphy, Kansas City, Mo.; H. M. Stewart, Kendallville; W. Rea Parker, Raleigh, N. C.; C. E. Hamilton, Kendallville; E. S. Watson, Charleston, W. Va.; E. P. Martin, Sumter, S. C.; Standing: M. O. Gregory, Raleigh, N. C.; R. M. Cloland, Norfolk, Va.; G. Garrison, Richmond, Va.; A. S. Sumner, Richmond, Va.; Frank Cadwallader, Charleston, W. Va.; M. T. Durham, Columbia, S. C.; B. R. Swint, Columbia, S. C.; R. O. Harbin, Greensboro, N. C.; J. F. Williamson, Charlotte, N. C.; N. F. Morano, Richmond, Va.; J. T. Wassell, Kendallville; R. J. Rehwinkel, Kendallville.

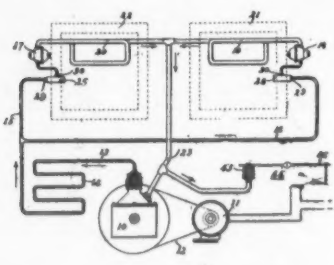


Below, DALLAS. Left to right—1st Row, Seated: C. E. Hamilton, Kendallville; W. C. Bader, Tulsa. 2nd Row, Seated: R. A. Leavitt, Tulsa; Frank Pratt, Houston; C. C. Alling, Jr., Houston; T. J. Murphy, Kendallville; E. A. Lightfoot, Phoenix; F. L. Farmer, Tucson, Ariz.; B. F. Rhodes, Dallas. 3rd Row: J. H. Byrne, Waco; H. T. Bruce, Amarillo; E. Vaughan, Tulsa; W. M. McElroy, Oklahoma City; B. S. Yost, San Antonio; R. B. Holmon, Shreveport; T. L. Waugh, Holdenville, Okla.; R. J. Rehwinkel, Kendallville; C. A. Higby, Tyler, Texas. 4th Row: C. T. Smith, Oklahoma City; C. E. Springer, El Paso; H. P. Julian, El Paso; J. J. Kargan, El Paso; E. E. Korr, Amarillo; M. K. Alston, Shreveport; G. J. Willoughby, Little Rock. 5th Row: A. J. Levinson, Dallas; J. A. Chensault, Ft. Worth; H. M. Stewart, Kendallville; J. T. Wassell, Kendallville; E. B. Rogers, San Antonio.

### Record of Refrigeration Patents (concluded)

1,704,522. REFRIGERATION APPARATUS. GEORGE M. TAOUR, Dayton, Ohio, assignor, by mesne assignments, to Frigidaire Corporation, a Corporation of Delaware. Filed Oct. 17, 1927. Serial No. 226,556. 3 Claims. (Cl. 62-4.)

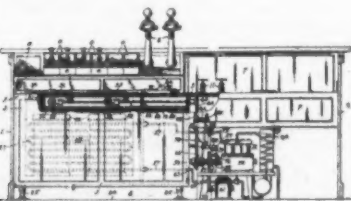
1. Refrigerating apparatus including in combination a refrigerating element, means for circulating a refrigerating medium through said refrigerating element, means responsive to the pressure of the refrigerating medium to the element or controlling the supply of medium thereto and means responsive to the temperature of said ele-



ment for controlling the supply of refrigerating medium thereto and means responsive to the pressure within the element for controlling the circulating means.

1,704,590. ICE-CREAM-MANUFACTURING AND SODA-FOUNTAIN APPARATUS. IRA COHEN, Highland Park, Mich. Filed Oct. 6, 1922. Serial No. 592,693. 5 Claims. (Cl. 259-64.)

1. In apparatus for supplying materials for dispensing purposes, including a casing forming a refrigerating chamber, a commodity container positioned within said refrigerating chamber, means for preparing a frozen commodity within said container, said means including an agitating mechanism removably positionable within said container, power transmitting means within said casing permanently positioned laterally of said container and disengageable operating connection between said power transmitting means and said agitating mechanism, whereby the agitating mechanism may be positioned or removed at will from the positioned container.

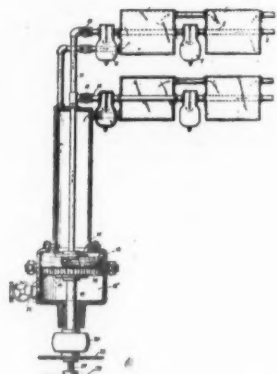


tioned laterally of said container and disengageable operating connection between said power transmitting means and said agitating mechanism, whereby the agitating mechanism may be positioned or removed at will from the positioned container.

1,704,649. SEPARATION AND LIQUEFACTION OF GASES. WILLIAM SPENCER BOWEN, Westfield, N. J. Filed Aug. 9, 1927. Serial No. 211,513. 5 Claims. (Cl. 62-123.)

1. An apparatus for segregating a gas or a mixture of gases by liquefaction of said gas, including pressure and expansion conduits arranged in heat-interchanging relationship and providing an enlarged accumulating chamber, a stator mounted in said chamber and forming a plurality of restricted passages between the two conduits to produce a pressure drop between a gaseous mixture admitted under pressure to the pressure conduit, and passing through said stator expansively into the expansion conduit, the passage through the stator being of such a size as to

produce a temperature below the critical temperature of one of the components of the gaseous mixture in the ex-



pansion conduit, and a rotor mounted in said accumulating chamber to be acted upon by the gaseous mixture as it leaves the stator.

### Editorial Features in Coming Issue of the News

The next issue, March 27, will give special attention to ice cream cabinets and soda fountains—applications which offer one of the big markets for electric refrigeration. Store display equipment will also be emphasized in this issue.

Water coolers and beverage cabinets will be treated in the April 10 issue with detailed information regarding the leading makes of equipment on the market. Rural refrigeration will be another feature.

The April 24 issue will be devoted to industrial applications of refrigeration. Material handling and delivery equipment for the electric refrigerator manufacturer and dealer will be given special attention.

Gas refrigeration will be featured May 8. This issue will also contain complete specifications of refrigerator cabinets for homes and apartments.

May 22, June 5 and June 19—three issues of special interest to central station executives—will carry the news of the annual N. E. L. A. Convention.

### Display Case Refrigerator by Parker Unit



Food Store Installation. Inset Shows No. 40 Unit of the Parker Ice Machine Co., San Bernardino, Calif.

### News Correspondents and Subscription Agents Wanted

ELECTRIC REFRIGERATION NEWS is appointing representatives to report local news and secure subscriptions. Only those actively connected with the electric refrigeration business are desired. The work may be done easily in spare time.

The plan calls for young men and women who are well known in the trade and who are interested in keeping in touch with affairs of the community. A letter to the NEWS every two weeks reporting events of interest will be sufficient to meet the needs in most localities.

The subscription work consists of making up a list of the distributors, dealers and important members of local companies for sample copy mailings. Subscription blanks will be enclosed with your name imprinted thereon so that you will be credited with returns. Blanks will be furnished for receipting subscriptions secured direct. Suitable payment is made for the service. Full information on request.

### Electric Refrigeration News

### Reduced Rate For Group Subscriptions

Twenty or more subscriptions entered at one time, \$1.25 each

Ten or more subscriptions entered at one time, \$1.50 each

In response to many requests a reduced rate is now offered for subscriptions orders in groups of ten and twenty entered at one time. This plan applies to subscriptions paid for by the individual subscriber, papers to be mailed separately to individual addresses. Remittances may be enclosed with order or one individual may be designated to take responsibility for payment on receipt of invoice. Manufacturers, distributors, and dealers desiring to enter subscriptions for ten or twenty members of their organizations are also invited to take advantage of this reduced rate.

Electric Refrigeration News,  
550 Maccabees Bldg.,  
Detroit, Michigan.



# ORGANIZATION PROBLEMS

## Much of a Distributor's Success Depends Upon the Selection of The Right Type Sales Manager

Competition, Advertising, Fast Production of Today Make Heavy Demand on Ability

By L. D. Mehaffey, Electric Refrigeration Dept., General Electric Co., Cleveland, Ohio.

It is highly probable that the main reason the average distributor is not making more sales and more money is that he assumes an attitude of omniscience just because he supplies the money to keep the business going. And yet few of them have had any sales training in the sense that a doctor, lawyer, engineer, or other professional man has trained for his vocation, or even in the matter of having had actual contact over a reasonable length of time with Mr. and Mrs. John Prospect upon which to base decisions they make. An investigation will show, too, that in a great many cases the money the average distributor has put into the business (if earned by himself), was earned at a time when selling was a simple procedure that required no special preparation, no regard for fine tactics, no close observation.

The time referred to is the time up to and shortly following the World War. It must be borne in mind that during this period the demand was nearly always ahead of supply and that selling called for little more than that a salesman be a good "mixer." Along came the great European upheaval and the brains of the entire universe were centered in this country to "speed up" production, with the result that today production is far ahead of the normal increase in consumption demand. Aside from mass production, we have keener competition today in almost every line than was ever known, and millions of dollars being spent annually in advertising to educate the buying public. Therefore selling nowadays calls for more than a fair knowledge of goods and of people, more than individual ideas.

The argument is thoroughly convincing that the second reason the average distributor is not making more sales and more money is that he fails to make the right selection in choosing a sales manager. It seems that the average sales manager is named without any thought being given to his personality, organization and leadership ability; and without these qualifications (to an unusual degree) no sales manager can even hope to make more sales and more money for the distributor.

### Salesman of Average Ability Makes Best Sales Manager

E. W. Drake, of Chicago, Ill., who devotes himself to vocational analysis, states: "It is the custom, and one I have condemned for years, to offer prizes to the best salesman, then take the winner and make him manager. This policy loses for the house their best producer, and kills the morale of the sales force as he is not a general. You will always hear this type of sales manager say: 'I can go out and sell more goods than the whole sales force put together'—and maybe he can. But that does not build a sales force. It is, as a rule, better to take a salesman of average ability who takes an all-round interest in the house, his goods, and his customers and make him sales manager, as he is a general instead of a specialty sales type."

James H. Rand, Jr., president, Remington-Rand Co., in his book (which every distributor will find it profitable to read), "Assuring Business Profits," has this to say about personnel selection: "The ability to select the right man for the job stands high among the priceless gifts of commerce."

"Today, with a highly developed specialization and large operations, a business firm must choose men, and their success depends upon the soundness of their choice. If they make an able selection, their business is strengthened and their progress accelerated; if they choose unwisely, the venture is handicapped."

It is by no means unthinkable that the third reason the average distributor is not making more sales and more money is that the man he has placed in charge of the sales force seldom makes any attempt to increase his knowledge and understanding of salesmanship in the way of enrolling for a course in salesmanship in the same way he would enroll for a course in advertising, accountancy, engineering, etc., if he chooses to follow any of those vocations. Seldom does he even avail himself of the great mass of information on salesmanship which can be had for the asking at any public library, nor does he subscribe for the various magazines covering the subject. He somehow does not think that it is necessary to do those things. Most such sales managers have been

—and are today—practicing salesmanship much in the same manner that a man practises music who plays a piano by ear. The fellow who plays by ear will sit down at the piano, put into operation certain principles and get a result without understanding the principle he is using. Consequently, when it comes to teaching someone else to do what he can do, the man who plays by ear is "up against it." Not knowing the principles he, himself, uses, he simply cannot pass this necessary information on to another. The same thing holds true of a great many sales managers; not understanding the principles they, themselves, use—and not making any effort through study to understand them—they can't teach the men under them how to sell. Lacking a knowledge of the fundamental principles underlying selling, about all they can do is to preach work, work, work, to their sales force. Give the average salesman information and inspiration and he will furnish the perspiration without much urging from a sales manager. The sales manager should have a sound knowledge of the principles back of salesmanship and the happy faculty of being able to pass this information intelligently on to the sales organization. Unless this is so, the distributor this sales manager works for is not going to make more sales and more money until he changes sales managers.

### Ineffective Methods of Hiring and Training Salesmen

It is entirely within the realm of probability that the fourth reason the average distributor is not making more sales and more money is that the customary way of hiring salesmen is mostly wrong; that, of course, is due to the inefficiency of the sales manager. What is meant is this: a want advertisement is run and the usual flotsam and jetsam respond. (And the amount of hard cash that is spent on want advertisements that don't "pull" because the average sales manager doesn't know how to write such an advertisement would pay dividends on quite a sum of invested capital.) From the flotsam and jetsam responding to the want advertisement certain men are selected, given a fifteen or twenty minute "pep" talk by the sales manager, handed some advertising matter, and order book and a "blessing," and then "turned loose." When they leave the office or display room, in nine cases out of ten they don't know where they are going, whom they are going to see when they get there, nor what to say. The effect is most unhappy and unprofitable; viz., after drifting around for a while like a ship without a rudder they become discouraged and quit. The direful consequences are that the firm employing such men lose money; for, regardless of what method of compensation is employed, a certain amount of overhead descends upon the head of every man interviewed and hired. In other words, a certain amount of money is invested in every man added to the sales force; and profits are made only on those who make good; money is lost on those who fail. Large employers of specialty salesmen have estimated that it costs from \$250 to \$2,000 to lose a salesman once he is hired.

If a salesman fails, he fails, because if he had been handled in a capable and conscientious manner, he probably could have been saved. The responsibility for the success or failure of a salesman—once he is employed—rests upon the shoulders of the organization hiring that man; directly on the shoulders of the sales manager; indirectly on the shoulders of the man who hired the sales manager.

It is possible and not by any means improbable that the fifth reason the average distributor does not make more sales and more money is that the old theory is still being used that you could make a man sell by pouring "ginger" talks into him. Salesmen cannot be "pepped" into selling in these days of keen competition and an educated buyer. It is equally futile to scold the salesmen, or to threaten them, or to drive them

with the whip of fear. Those old-time methods have been—or should be—abandoned by modern sales management. The talking and preaching sales manager won't—and doesn't get anywhere today. The men must be trained before they can sell.

The doctor, lawyer, engineer—virtually all professional men, as a matter of fact, devote years of study to their vocations. All but salesmen and the average sales manager. Apparently salesmen and the average sales manager think it is not necessary to study scientific methods in sales work. Too often they strive for efficiency in many things—golf, bridge, tennis, etc.—but think that guess-work methods are sufficient in selling.

It is perfectly possible that the sixth reason the average distributor is not making more sales and more money is that the salesmen's work is not divided into specific tasks, and directed and supervised in the same orderly fashion that a clerk, stenographer, bookkeeper, or any other worker is given specific tasks. The only productive time a salesman has is the time he actually spends face to face with a logical prospect. The time spent sitting in the office or display room, twiddling away his time, is neither productive nor profitable for him, nor for the firm employing him. But, inasmuch as few salesmen are "self-starters" (if they were the chances are they wouldn't be salesmen very long), the responsibility again rests on the shoulders of the organization hiring such men. If a man is hired right, properly coached, directed, supervised, and inspired, the result will be less time spent doing nothing, more sales and more money for all concerned.

Salesmen should be routed. The average salesman when left to route himself doesn't have to wait until spring to get wanderlust. Usually he has a bad case of it the year 'round. He is forever thinking of a "hot" prospect just at the other side of town. Does he wait until he gets to that part of the city in the natural course of events? He does not; he skips right across fertile fields to the faraway prospect who always looks good from a distance.

### Salesmen Need Assistance of Good Letters and Literature

There is more than a possibility that the seventh reason the average distributor is not making more sales and more money is that salesmen's calls are not backed up by letters and literature. This should be done if for no other reason than that a letter or piece of literature can go out much sooner after a salesman's call than the salesman, himself, would dare call without jeopardizing his chances of getting the business. Repetition of the sales message, both in person and by mail, is bound to lessen sales resistance, and this will result in sales which could not have been obtained if no attempt were made after the salesman's call.

Summed up, it seems that the paramount reason the average distributor is not making more sales and more money is that he usually "takes a leap in the dark" in the selection of his sales manager, when he should at least exercise ordinary prudence in seeing that the man selected for the job has personality, organization and leadership ability above the average.

Personality is, of course, of two different types: pleasing and convincing. A pleasing personality is one that is based on a pleasing appearance, manner, and behavior. A convincing personality is one that is founded on a sound knowledge of the principles back of salesmanship and the happy faculty of being able to pass this information on to a sales force. Without both of these types of personality no sales manager can hope to hold the respect of his men. It is one thing to be able to sell, and quite another thing to teach and inspire others how to sell and keep them continually at it. This requires personality of the highest type.

Watch the average sales manager for a day or two and you will "get" what is meant by "organization" ability. Again quoting James H. Rand, Jr., from his book, "Assuring Business Profits":

"Most business men think they are earning their salary when they are keeping physically busy, but as a matter of fact the time spent in going through motions is largely unproductive in the true sense of the word."

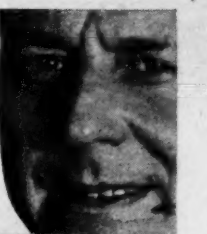
### Business Waste Valuable Time on Unimportant Matters

"The average business man wastes more time than anyone else. I do not mean that he actually loafs on the job, but I do mean that he does not make his business hours as productive as they should be. He spends hours at his desk going through motions of being busy on important matters when he is either accomplishing nothing or is attending to things that someone else whose time is less valuable could do as well."

As to leadership ability, the average sales manager brings to mind the story of the French general of olden times who, when he saw a great crowd of his people rushing down the street, exclaimed: "There go my people; I must follow them, for I am their leader." Rest assured that

(Concluded on Page 38, Column 2)

- 1 In a single remote installation what is the maximum distance allowable from the compressor to the refrigerator?
- 2 What defects cause a hot suction line?
- 3 A certain office has 50 employees. Find the heat that must be removed from drinking water in cooling it down from a faucet temperature of 60°F. to 45°F., assuming a pipe or line leakage of 30 percent.



## Can You Answer These Questions in ELECTRIC REFRIGERATION

### FREE BOOK

THESE and all other vital points about Electric Refrigeration are thoroughly and practically treated in a new home study training endorsed by leading refrigerator companies (Servel, Kelvinator, Copeland, and others.) It is written by a practical refrigeration engineer—J. B. Rathbun, who has designed, installed and serviced small machines as well as refrigeration plants for the leading meat packers, over a period of 27 years.

Sales and service men ambitious for promotion and big pay—here is your opportunity to deserve it. Dealers and refrigeration company executives will find this course a helpful, ever-ready guide. Manufacturers anxious to train their staffs thoroughly are finding this course a splendid training medium.

"Opportunities in Electric Refrigeration" explains course fully also full details of easy payment plan. Get the facts without obligation. Fill in name and address below and mail to Utilities Engineering Institute, Dept. 43, 3120 North Clark Street, Chicago, Illinois.



Name \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_  
Position \_\_\_\_\_  
Mail this coupon to Utilities Engineering Institute, Dept. 43, 3120 North Clark St., Chicago, Ill.

## SUPERIOR REFRIGERATOR CASTINGS

FLINT FOUNDRY COMPANY

Division of General Foundry & Machine Company

FLINT, MICH.

MARSHALL, MICH.

## THE PURPOSE AND RESULT OF OUR CONSOLIDATION

Our purpose is to have within one company ample facilities and resources for the development and manufacture of the finest line of automatic controls obtainable.

The merging of the four companies has permitted the employment of engineering and manufacturing resources for the perfection of our products on a basis that would have been impracticable for any one of the companies to undertake separately.

We are confident that the results of our combined efforts will be such that the products and service we have to offer will be of real interest to you as a user of automatic controls.

## TIME-O-STAT CONTROLS COMPANY ELKHART, INDIANA

Successor to

Absolute Con-Tac-Tor Corporation  
Time-O-Stat Corporation

Leachwood Company  
Cramblet Engineering Corporation

### Manufacturers of AUTOMATIC CONTROLS for

Oil Burners : Gas Burners : Coal Burners : Electric Refrigerators : Furnace Fans  
Mechanical Stokers : Industrial Ovens : Ice Machines : Unit Heaters : Water Heaters  
Also Sign Flashers : Mercury Switches : Electric Heaters : Corrugated Metal Bellows



## Germantown Representatives and Dealers Form Home Service Group



Dealers and representatives of the Philadelphia Electric Company's Germantown office have formed the Germantown Home Service Representative Group which is pictured above. Top row left to right: O. Mattusch, C. E. MacNichols, Serel representative, D. Whitling, J. P. Donnelly, C. B. Day, J. Nagle, F. Noble, S. Silverberg, J. Foley, A. Fitzgerald, H. I. Weweler, C. H. Mentzel, E.

M. A. Scott, A. Chancellor and Joseph McIlhenny. Middle row: John Corper, Mary Long, Madeline B. Small, V. B. Heary, L. J. Dougherty, W. J. Lochart, C. W. Deeg, Mrs. M. B. Hetrick, Violet Neger and Harry Weiss. Bottom row: F. Norris, V. Finn, R. T. Scott, W. F. Morgan, L. P. Boyle, G. Middleton, J. G. Mahoney and J. J. Finnegan.

### Milk for Children Kept in Electric Refrigerators

W. E. Haskell, Inc., General Electric dealer in Springfield, Mass., has installed electric refrigeration in two nurseries of the Springfield Day Nursery Association, where approximately 100 children are cared for daily. Since this installation, the institution has adopted the use of bottled milk. The Springfield Young Women's Christian Association recently had General Electric refrigerators installed in its establishment by W. E. Haskell, Inc.

### RIGHT KIND OF SALES MANAGER IMPORTANT TO DISTRIBUTOR'S SUCCESS

(Concluded from Page 37, Column 3)

when a sales manager gets in front of his men and asks "are there any questions," that he lacks initiative and is "passing the buck" to his sales force to furnish him with ideas to talk about. He is, in other words, following, not leading.

Further thought on leadership ability is expressed very clearly by Edgar James Swift, head of the department of psychology in Washington University, St. Louis, Mo., in his book, "How to Influence Men." He brings the thought out in this way:

"Only recently have business men become interested in the psychological aspect of efficiency. . . . Now, however, manufacturers and distributors are awakening to the enormous expense caused by vocational unfitness of employees, and they have appealed to psychologists for vocational tests which may be used in connection with measures of intelligence. The ability of workers for specific tasks can now be determined, and rating scales have been prepared to discover not only what a man can do, but what he actually does accomplish."

"Good will, again, has long been regarded as a business asset, but until lately it has been limited to the friendly attitude of the trade, or buying public. Employees were in a class by themselves. Their services were bought, and their daily wage or monthly salary ended with the obligations of the firm. These workers were like hired soldiers of earlier days who fought without enthusiasm or loyalty. They never marched with shoeless and bleeding feet to meet the enemy as did Washington's men on many an ice-strewn road."

#### Loyalty as Necessary in Business as It Is in War

"Napoleon was not the first to discover the value of loyalty in winning battles, but he estimated that it was worth more than battalions and guns. A recent military leader has added his opinion. With enthusiasm, he says: 'Armies, inferior in every material respect to their opponents, have triumphed; without it (loyalty) numerous and well-equipped hosts have failed.'"

"But war, you say, is not business. We are speaking, however, of morale, and if battles are lost by well-fed armies with superior material equipment and greater man-power, the explanation must be sought in the loyalty of the victors for their leader. Morale has no other sources. The cause for which men are fighting gradually loses its force and, while new motives for the creation of enthusiasm may be found, the stock is soon exhausted. Something is needed to keep zeal and determination aflame, and that something is leadership. But leadership cannot exist without confidence in the ability of the leader and his interest in the welfare of his men. This last requirement of leadership is often overlooked because it is purely psychological. Yet it was an immensely important factor in the achievements of Washington and Stonewall Jackson. The common soldier knew always that he was not forgotten either in the plans for victory or in the strife of combat. Failure to appreciate this psychological factor has lost many a battle, and it has changed black ink to red on the balance-sheets of distributing organizations and business houses."

Here are the "high-spots" of the foregoing from "How to Influence Men": Manufacturers and distributors are awakening to the enormous expense caused by the vocational unfitness of employees.

Good-will is no longer limited to the friendly attitude of the trade, or buying public, but must take into consideration the employees as well.

But war, you say, is not business. We are speaking, however, of morale, and if battles are lost by well-fed armies with superior material equipment and greater man-power, the explanation must be sought in the loyalty of the fighters to their leader.

The cause for which men are fighting loses its force and, while new motives for the creation of enthusiasm may be found, the stock is soon exhausted.

Something is needed to keep zeal and determination aflame, and that something is leadership.

But leadership cannot exist without confidence in the ability of their leader.

Failure to appreciate this psychological factor (leadership) has lost many a battle, and it has changed black ink to red on the balance-sheets of manufacturing plants and distributing organizations.

If Mr. Average Distributor will get a satisfactory answer to the following questions, he will at the same time have the answer to the question, *Why don't Distributors make more sales and more money?*:

1. Is my sales manager vocationally fitted for his job?
2. Has he the good-will of his men?
3. Have I the good-will of my employees?
4. If the morale of the sales organization is not up to par, is it because the men are not loyal to their leader?
5. Is it not a fact that new motives for the creation of enthusiasm are soon exhausted?
6. Can my sales manager keep zeal and determination aflame in the sales force?
7. Has the sales force confidence in the ability of their leader?
8. Is my failure to appreciate lack of leadership ability in my sales manager liable to put and keep my balance-sheets in the red?

### CURRENT OFF 14 HOURS DURING FIRE; ICE CUBES STILL SOLID

Ice cubes were found in a refrigerator, made by the J. T. Manufacturing Co., Nashville, Tenn., recently, after the electric current had been cut off on account of fire, for fourteen hours, according to W. B. Evans, president of the company.

The Harding Court Apartments in Nashville, a thirty-apartment building, was totally destroyed by fire. The following day the refrigerator which survived the fire was opened and ice was intact in the ice tray. The porcelain exterior was very much warped and the enamel was burned off but the insulation was little harmed and the food and ice were still in good condition.

### N.E.M.A. TO HOLD SPRING MEETING IN HOT SPRINGS, VA., MAY 20-25

The spring meeting of the National Electrical Manufacturers Association will be held at The Homestead, Hot Springs, Va., May 20 to 25, 1929.

### Arch Nichols Goes With Erco, Inc.

Arch ("Nick") Nichols, has been appointed promotional sales manager of Erco, Inc., Buffalo, N. Y., distributors of General Electric refrigerators. Mr. Nichols was formerly buyer of appliances at J. N. Adams & Co., Buffalo, N. Y.

### Carnegie Electric Co. Gets Copeland Distributorship in Cleveland

The Carnegie Electric Co., 10012 Carnegie Ave., Cleveland, Ohio, has recently been appointed distributors for Copeland electric refrigeration.

The leading refrigerator manufacturers are buying

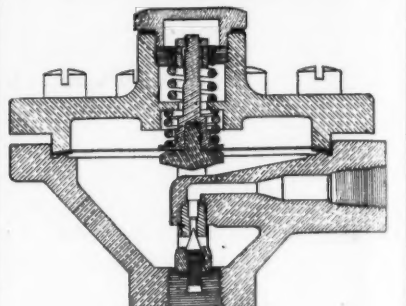
## BOSLEY'S

"Ice Saver" Gasket for it is the best uniform quality insulation

Write us

The D. W. Bosley Company  
1901 Carroll Ave. Chicago, Ill.

### THE NEW IMPROVED HEIDEMAN Liquid Control Valve



-HEIDEMAN-

More Positive than ever. Sensitive to the slightest adjustment. Built to accommodate every range of pressure for domestic purposes. One easy adjustment. Priced right.

F. J. HEIDEMAN  
6331 E. Jefferson Ave.  
Detroit

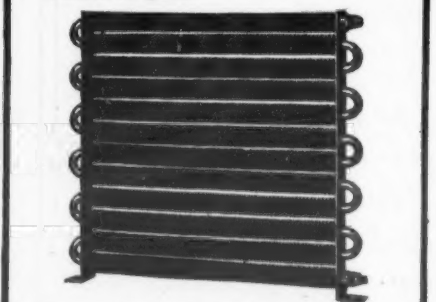
## McCORD BUILT

### CONDENSERS



Type "B" Continuous Coil McCORD CONDENSER

McCord condensers are made in many sizes and shapes to meet the requirements of a wide variety of electric refrigerators



Type "A" Single Row Continuous Tube McCORD CONDENSER

McCord "Spiral Fin" continuous tube condensers are made by a patented process that insures a continuous metal to metal contact between the fin and the tube. Only seamless, bright, annealed tubing is used and the fin is corrugated, giving greater radiative efficiency.



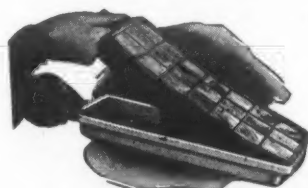
Type "B" Spiral Fin Continuous Coil McCORD CONDENSER

The popular "bee hive" condenser designed to occupy a minimum of space. It is installed so that all air currents created by the fan pass over the coils giving great capacity with a small amount of tubing.

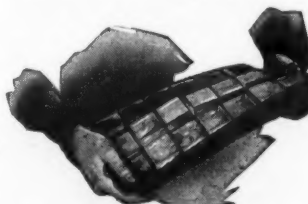
McCORD RADIATOR & MFG. CO.  
DETROIT MICH



## Better ICE CUBES Easier Write Today for the Facts



FLEXO TRAY removes the last customer irritation. It is a convenience that saves time and bother. Ice cubes may be removed without holding under



the faucet—untouched by human hand. A single cube may be removed when desired, without melting or disturbing the others.

Flexo Tray, the pure rubber ice tray, is creating a sensation in the industry. It has advantages over the old style tray that merit your immediate consideration. Flexo Tray offers you not only a profit on each sale, and it sells on sight, but is a sales promotion tool that opens the door to greater sales of electric refrigerators. We have just prepared a comprehensive, illustrated folder, explaining Flexo Tray in detail. It is full of valuable information for distributors and dealers, and will be mailed promptly and without obligation.

#### Mail the Coupon NOW

G. M. Dwelley, Inc., Curtis Bldg., Detroit:  
Please mail your illustrated folder describing Flexo Tray, the pure rubber ice tray.

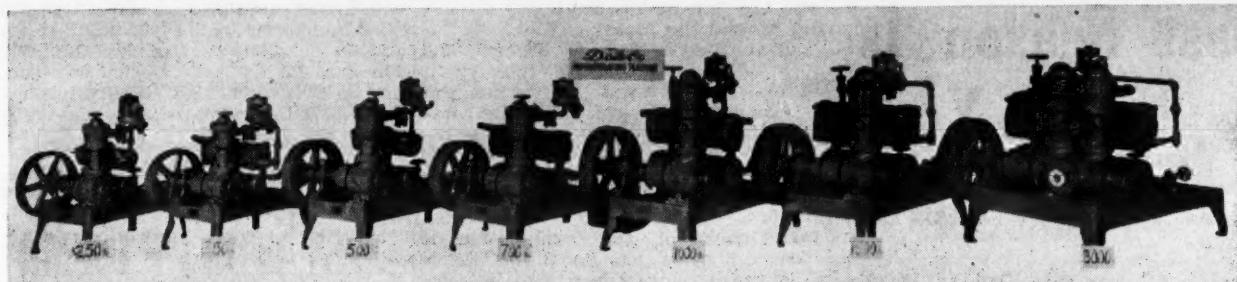
Name \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_

## G. M. DWELLEY, Inc.

235 Curtis Building, Detroit, Mich.

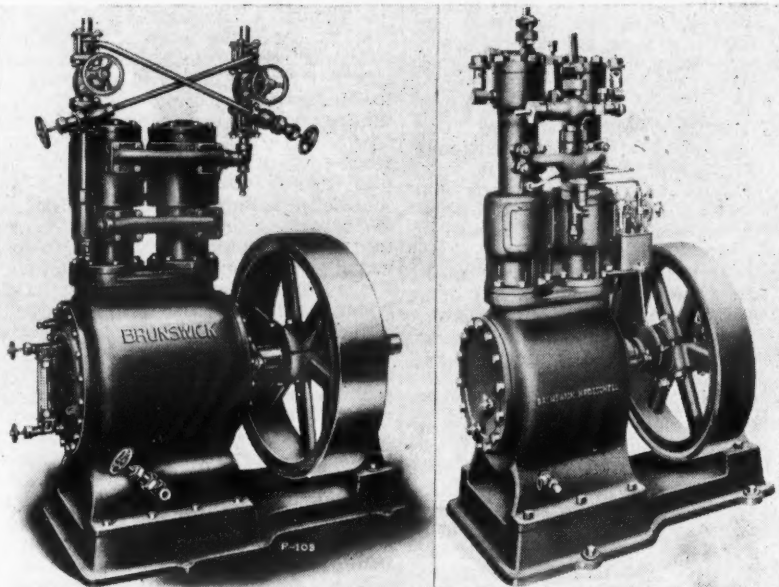


# COMMERCIAL UNITS



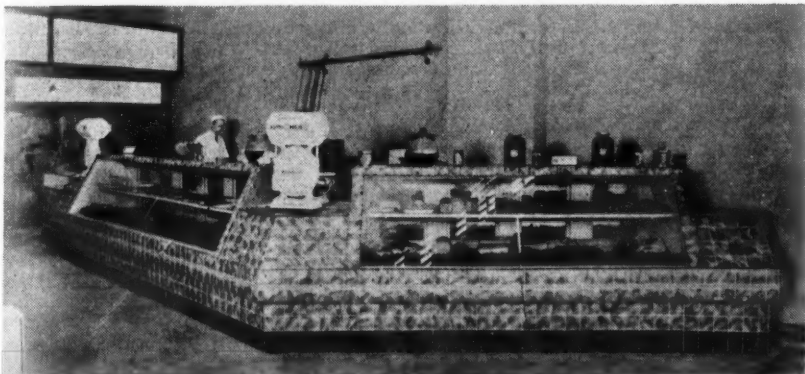
Seven Sizes of Commercial Units Made by Dole Refrigerator Machine Co., Chicago, Ill.

## Brunswick-Kroeschell Offers Ammonia and Sulphur Dioxide Machines



Twin Cylinder Ammonia Unit      Twin Cylinder Sulphur Dioxide Unit  
Two Units in Commercial Line of Brunswick-Kroeschell Co., New Brunswick, N. J.

## Super Cold Unit Display Cases Offered in Varied Color Combinations



Super Cold unit display cases are offered by the Commercial Refrigerator Mfg. Co., Los Angeles, Calif. The assembly shown above is made up of five units.

*Important!*  
No sealing compound necessary  
to fill in loose cracks or joints  
when correct insulation is used  
in your refrigerators

Insulite, the wood-fiber insulating board, can be furnished to within 1-32" of any dimensions required for refrigerator installations. This minimum cut-to-size feature insures good strong construction and eliminates the use of an excessive amount of sealing compound to fill in loose cracks or joints.

The rigid structure of Insulite permits its being stocked at your plant with no waste due to breakage or chipping off at the corners. This affords a good snug fit at all locations. Then too, labor costs and waste material are considerably cut down.

The great strength of Insulite is being economically utilized by large cabinet manufacturers, as it makes possible a great reduction or entire elimination of the main framing ordinarily required to construct sturdy cabinets.

Samples and Technical Details Will  
Be Gladly Sent Upon Request

**INSULITE**  
the Wood-Fiber Insulating Board

THE INSULITE COMPANY  
Refrigerator Sales Office:  
717 Conway Bldg.  
Chicago, Illinois  
Home Office:  
Bulldog's Exchange,  
Minneapolis, Minn.

## OMAHA DISTRIBUTORS REPORT HEAVY SALES AND GOOD PROSPECTS

Estimate 3,000 Homes In City  
Have Electric Refrigerators

THREE of the larger companies now engaged in making and marketing electric refrigerators have made special efforts in Omaha the last year. General Electric, Frigidaire, and Kelvinator have strong sales forces in the field. The field here is considered virgin soil as far as the sales are concerned. Real estate surveys show there are 56,000 homes and apartments in this city. Of these 42,500 are reported as being wired for the use of electricity. One-half of this number is counted as possible prospects for the sale of an electric refrigerator. To date, managers of the established branches here figure 3,000 homes are now supplied with electric refrigeration.

The Nebraska Power Co. handles Kelvinator locally, while the McGraw Electric Co. is territorial distributor for this machine. W. J. Krug, in charge of new business for the company, is directly concerned with the sales management of Kelvinator. He reports 465 machines installed in Omaha during 1928. The largest number sold at any one price was in the \$210 machine, yet the average sale was \$220. When asked the one thing that had been the greatest help in selling the past year, Mr. Krug immediately replied, "Proper installation. People as a whole have been just a little skeptical as to electric refrigeration. Good installation gave us the opportunity to show the doubters just what could be expected. Then it made boosters for us in every home where installed and the good words spoken by satisfied housewives were a tremendous help."

Storz Bros. are the local agents for General Electric refrigerators in Omaha. E. J. Nellor, the manager of the refrigeration department, installed 311 units in Omaha. The sales force was increased during the year until now there are 24, which will be further augmented until the 1929 force will reach 35. Besides city sales Mr. Nellor placed 1,545 units in the surrounding territory. The average price per unit on city sales was \$326, a considerable increase over 1927. Total sales in the territory covered by Storz Bros. for the year reached \$404,709.

General Electric made an installation of sixteen of the P-123 in one of the large hospitals of the city that resulted in selling a great many of the physicians in the city. "The best advertisement we had during the entire year was this hospital sale," said Mr. Nellor. "Another queer thing was the large number of colored people who bought during the last year." W. K. Davies, formerly with Kelvinator, has joined forces with G. E. for 1929 and will have charge of the city selling force, giving Mr. Nellor more time for the general management.

Frigidaire in Omaha sold and installed 650 machines in residences during 1928 and placed 228 machines that were classed as commercial. The average price was about \$245. One of the latest installations of these machines was a large apartment house. There has been no serious trouble experienced here by any of the electric refrigerator people with multiple installations.

Orchard & Wilhelm, handling Copeland in Omaha, sold twenty commercial units and installed quite a number in residences. The sales made by this company were the result of personal calls at the store, as no city salesman was maintained. No outside effort whatever was made and very little advertising space given. The Woods-Copeland Co., of Lincoln, are district distributors for Copeland in this territory.

Milton Rogers & Son Co. are Omaha distributors for Zerozone. A report made by that firm shows an even hundred machines were installed in Omaha in 1928. A stronger effort will be made by this firm the current year.

No figures were available as to the number installed by the Wayne, but enough to at least make the total distribution in Omaha reach the 1,500 mark for the year. All companies here are making arrangements to greatly increase these figures during 1929.

The American national ice bill is estimated by the National Association of Ice Industries to have been \$430,000,000 during 1928, an increase over 1927 consumption of 33 1-3 per cent. Even so, it is considered that not more than 42 per cent of families in the United States use ice boxes.—Cold Storage.

The first convention of the electrical industry took place in Chicago in 1885. There were approximately 600 lighting companies in the United States, only 60 of which were making any attempt to furnish continuous service.—The Electrical Contractor's Magazine.

**20%**  
of all retail sales result from  
effective displays.

**Trutulife Foods**  
selected for proper shelf arrangement  
complete a refrigerator display  
appealingly and permanently.  
Price list sent on request

Trutulife Wax Products Co.  
27 Erie St., Milwaukee, Wis.

## E. T. L. Service for Domestic and Commercial Electric Refrigeration

Testing and experimental laboratory service for Manufacturer, Distributor, Central Station  
Test data exclusive property of client

**ELECTRICAL TESTING LABORATORIES**  
80th Street and East End Avenue, NEW YORK CITY, N. Y.

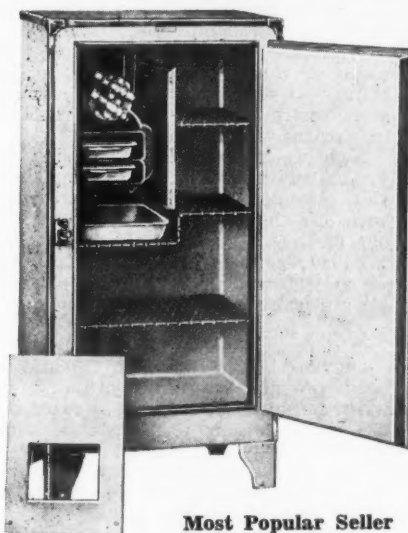
## You Can't Go Wrong

IF YOU  
USE

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CABINETS

ON YOUR APARTMENT HOUSE JOBS



Most Popular Seller

No. 521—5.2 Cu. Ft. 6 1/2 Sq. Ft. Shelf  
Space. Removable Front Baffle. Porcelain  
Drip Pan. 22 1/2" wide, 45" high,  
17 1/2" deep.

Can also be furnished without legs.  
Special Sizes to meet any  
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Ask for Details.

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FREMONT, NEBRASKA

Crystal Cabinets have made a 100% record for service and satisfaction in thousands of old and new apartments the past three years. This is not surprising when it is considered that Crystal has been making steel refrigerators since 1910.

Pure Cork Insulation, sealed within air-tight steel walls is one of the many reasons for Crystal's remarkable record.

Crystal Cabinets will reduce the cost of the job because more than the usual number can be hooked up on one compressor.

## Dehydrated and Sealed

Highest quality seamless copper tubing  
—perfectly dehydrated and solder-sealed  
—ready for quick installation. Send your  
production requirements for quotations—  
or wire for rush shipment from stock.

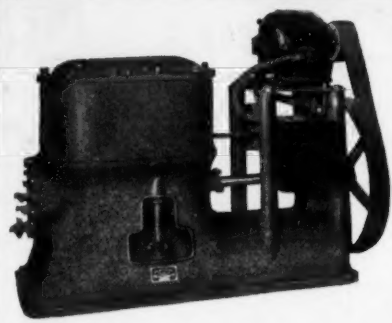
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Dayton, Ohio, New York City, Dallas, Texas.





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You need the **PEERLESS** line of compressors. **PEERLESS** units give you a **COMPLETE** line, ranging from one to ten tons. **PEERLESS** Perfected Multiple Apartment System is recognized leader in its field. Full details given on request. Our record warrants your most exacting investigation.

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515 W. 35th Street  
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**Greater Efficiency  
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## FLINTLOCK CORPORATION

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## C P Refrigeration

Self-Contained Units from 500 pounds to 4 tons ice melting capacity. Ammonia or methyl chloride refrigerant. Over 30 years in the refrigerating machine business. We invite the live wire dealer who seeks to build a permanent business to get in touch with us.

**THE CREAMERY PACKAGE MFG. COMPANY**  
1243 West Washington Blvd. Chicago, Ill.

## One-Piece

There is only one one-piece porcelain enamel. Tenacious, fused into metal, it is the foundation of all durable refrigeration installations. May we tell you why? Porcelain Enamel & Manufacturing Company, Baltimore, Md.



# CENTRAL STATION SELLING PLANS

## The Industry's Best Season Is Just Ahead—Brush Up on Your Sales Talk and Go After Them

The following paper, "Selling Electric Refrigeration," was submitted by W. A. Blachford of the Edison Electric Illuminating Co., of Boston, for the 1927-28 Arthur Williams Award. The sales organization plans and suggestions are applicable to the present year and are particularly timely right now.

ONCE more we are on the threshold of summer, with its many opportunities for selling refrigeration. Prospects are exceedingly bright for a prosperous year for each of us; but before directing our energies and a renewed effort, it is wise to pause long enough to make an analysis of our accomplishments in 1927, and to map out a plan of action for this year so that our deficiencies in the past can be corrected and any wasted effort forestalled in the future.

How many of us have faithfully kept the resolutions we made last year. Probably, many of us will find that even our intentions were not so good, but those of us who resolved to do certain things and really did them, profited a great deal in the accomplishment.

I am listing here a few points which come to mind, which I believe, and I think you will agree with me, should be given consideration by every salesman in starting a new season's work.

Have we made a record this past year, which we feel was equal to our ability as a salesman, or have we been satisfied with less than our best? Let us go over our method of operation and not hesitate to recognize and correct any flaws we may discover. Only by so doing can we improve our record for next year.

### Canvassing

Of vital importance to every salesman is his prospect list, and a primary factor when building up this list is canvassing. No one can hope for continued success in the selling field without devoting part of his time to house work. If we have been negligent in this respect, let us spend some time in canvassing, for it brings big returns.

Another important factor which, in a large measure, determines the success of a salesman is the way in which his time is utilized. Was our time this past year, so that every possible minute of it could be spent in the presence of our prospective buyers, or did we lose time each day through failure to plan a definite objective? Let us resolve this year, to work out a definite schedule each day so that lost time can be cut down to a minimum.

In the final analysis, the results that are obtained in selling refrigeration are in proportion to our ability to "tell the story" clearly and convincingly. Facts must be presented in a logical order to make the deepest impression. If we do not know our merchandise thoroughly, we will find our sales talk will improve 100 per cent by learning it. Therefore, let us make this one of our resolutions, to not only know the story, but to improve its presentation so that we can hold our prospect's undivided attention.

There is so much for every salesman to learn about the business, and new developments are increasing so rapidly that it requires constant study to keep up to date. Some time should be devoted each week to study. Such application will have a definite bearing on our ability to convince. We will all do well to start in at once and set aside a definite time each week that we are going to devote to increasing our fund of knowledge on electric refrigeration.

### Refrigeration Is Important

One of the most prevalent impressions held by the people with whom the salesman comes in contact, is that, electric refrigeration for the household is a luxury. In emphasizing this argument, they often assert that thousands of families do not avail themselves of even ice, except during several of the hottest months. This luxury argument, of course, is untrue.

Electric refrigeration is an absolute necessity to the American form of living and it is a very unusual city family that does not in some way depend upon its protective powers. It is one of our duties to impress this point upon those who hold the luxury idea regarding refrigeration. It is part of our selling task to explain to such prospects that a large variety of our most common foods would be impossible if it were not for electric refrigeration. Dairy products, fresh vegetables, fresh fruits, meats and sea foods would be available only in certain localities and at certain times of the year. Without automatic refrigeration it would be a common sight to see people walking to the outskirts of town for milk and cream just as our forefathers did. Fresh poultry, eggs, oysters could not be distributed as they are if it were not for the bacteria destroying temperatures of automatic refrigeration.

Those people living in cattle countries would subsist largely on a meat diet, while those residing far distant would have little or no meat. Tropical fruits

could not be obtained in certain localities. In short, the diets would be reduced to the status found during the Middle Ages when only the wealthy could obtain even a meager variety of food.

Statistics show that 50 per cent of the families in the United States attempt to use temperatures furnished by nature, for the preservation of food. They place it in cellars, pantries, window boxes and ventilated coolers, believing that these devices provide adequate protection. Electric refrigeration salesmen have a large field to educate.

### The Salesman's Attitude

Salesmen generally are enthusiastic. They must and should be. Above all others, the electric refrigeration salesman should find inspiration for zeal and optimism. The world is smiling upon him. The industry and the public have both frankly accepted the idea of "Ice By Wire" and his way is made plain and smooth. Of course, it will be a very serious matter for all of us in the industry if competitive strife is permitted to interfere with harmonious co-operation in the educational development of the refrigeration market. The other day, in a Western city, a prominent local banker telephoned the vice-president of the electric power company and stated that a salesman for another make of machine had told his wife that the gas used in his refrigerator was poison—was this true? In another city, a salesman conceived the brilliant thought of carrying with him a bottle of gas of an unpleasant odor, but well established usefulness in refrigeration. He uncovered it beneath the nose of a prospective customer with the statement, "Smell this. Do you want that sort of stuff in your house?"

Eagerness for orders had caused these young men to overlook the fact that their opportunity lay not in keeping a competitor from making a sale, but in helping to get more and more refrigerators into use. The problem today is not to find customers, but to provide equipment to meet the demand. For any salesman to knock any type of safe and efficient refrigerator employed in any dependable unit is an offense against the entire industry and a blow at his own employer. The truth of this cannot be too carefully studied by a selling man.

The bee that makes the honey doesn't hang around the hives.

Men are used as they use others. The ladder of sales success is filled with splinters—but they hurt most when you are sliding down. A salesman who complains about his territory advertises his failure. The more you say the less people remember. All people smile in the same language. Hammer your iron when it is glowing hot.

Don't choke off that explanation of a prospect by which he thinks he is telling you he cannot buy. Let it come. This brings the enemy beautifully within range. This prospect who thinks he is telling you why he cannot buy, is really telling you just how to go about what you are trying to accomplish.

### Suggestions Win, Arguments Lose

One of the most futile things in the world is arguments. If you want to persuade anybody, suggest, do not argue. When you argue with a man you arouse his antagonism, you rarely obtain his co-operation. There is a story told of a man who went to a clothing store and asked to see a woolen suit. The storekeeper produced a suit—the customer examined it and then said, "It looks pretty good, but it doesn't look like wool." "Shall I wrap it up for you?" said the salesman. "Sure, I guess I'll take it. But tell me, why didn't you argue with me when I said it wasn't wool? As a matter of fact, I really don't know whether it is wool or not." "Well," said the merchant, taking the money, "you see, if I win the argument I lose the sale, so what's the use?"

### Trained Men Are Essential

A study of electric refrigeration conditions in more than 150 localities shows unanimous agreement on the point that trained men are essential. The salesman, the installation men and the service men must be trained for a period of from two weeks to three months if satisfactory results can be obtained. Agreement is not had on the definite time required for training, because experience differs in different localities, with the product sold and with the type of men used. Manufacturers' schools for training refrigeration men are, however, agreed upon as necessary and highly influential in determining success or failure in the business.

Refrigeration salesmen should be specialized men who know the product they sell intimately, who know how it should be sold and who know how it should be used by the buyer. Many bad impressions will be avoided and many more sales will be made if competent and trained salesmen are used. Another important group of men are those who install units. These men must know their business because the first essential to successful refrigeration operation is the correct installation. Instance after instance of unsatisfactory service may be traced to the lack of proper precaution in this highly important matter.

All refrigeration requires servicing in some measure, and men to do this work must be trained mechanics who have specialized for some time on refrigerators. This practice makes for quick service, lower costs per customer and more service calls per man per hour. An ill-trained service man produces in the mind of a home owner the same reaction that is caused by an ill-trained plumber.

The survey shows clearly that in every case where trained men have been used and where brains have been devoted to

building an organization for refrigerator sales and service, an outstanding service and financial success has been the result. The case for domestic electric refrigeration is proved, but as in any business, success requires skill, industry and brains.

## COMPETITION ALTERS STATUS OF ICEMAN

From The Chicago Tribune, March 8

One of the effects of the intense competition that in late years has developed in the refrigerating field has been a change in the status of the iceman.

The manufacturers of ice are striving to turn him from a mere agency of delivery into a salesman. All over the country there has been a campaign to put him into uniform. Questionnaires sent out by the National Association of Ice Industries recently showed that of the responding companies 55 per cent now had their icemen in a special white, blue, gray, or striped material.

It has even been advocated that schools be established for training the ice delivery men in deportment, stressing such matters as care not to allow water to drip on the floor, politeness to the customer, and the maintenance of friendly relations with him, or her. As a matter of education, quite a few of the manufactured ice companies have engaged women trained in schools of home economics to make house to house calls and diplomatically explain the best methods of using and conserving ice.

This new interest in sales by the ice makers comes admittedly as a result of the competition. Builders of mechanical refrigerating units, the dry ice and silica gel proponents are making strong bids in the field.

But the icemen assert that in spite of all opposition they are doing more business than in past years. They claim that they still are furnishing 95 per cent of the refrigeration and that the increased interest caused by the mechanical cooling campaigns has widened their markets and actually brought them more business.

### Large Market

Estimates placed the manufactured ice production in this country at 60 million tons last year. Domestic and commercial consumption was figured at 1,020 pounds per capita. One authority fixes the number of homes wired for electricity but without refrigerators at 5 millions and the percentage of homes that use no refrigeration at 44 per cent of the whole.

There is a general idea that the electric utilities companies are striving to sell machinery that will tend to cut the ice manufacturers' business. As a matter of fact, some of the largest utilities companies are ice makers and sellers on a big scale and find the ice plants profitable.

Refrigeration, in the last analysis, is simply a form of power. Whether it will be practicable only to transmit the power direct to the consumer by wire or whether it can still be applied in a plant and then distributed on an ice wagon will be decided in the coming years. But the emphasis is on service to the consumer by all competitors, on persuasion. That's why the iceman now must have a shave and a soft voice and a uniform.

## Holmes Tests Machine Performance on Assembly Line



The Assembly Line in the Holmes electric refrigerator plant at Bridgeport, Conn. During the 72 hours each machine is on this assembly line it is completely tested for every detail of efficient performance.



# THE REFRIGERATOR IN THE KITCHEN

## Eliminating Waste of Left-Overs Appeals to Economical Housewife

By Helen Penn

AFTER the domestic electric refrigerator meets the requirements of factory tests and is satisfactorily manufactured, after distributorship has been established, dealers selected and salesmen carefully trained, it comes into the household kitchen. And there it must meet the household requirements. The housewife is the final judge of the electric refrigeration industry in its domestic application.

Unless it meets the requirements in the kitchen, all the work that has gone before is useless.

That the refrigerator has met these needs has been proved by the approximately 500,000 units sold in 1928. But with a total of perhaps a million and a quarter units in use it leaves nearly 20 million homes wired, ready for electric refrigeration, but using other refrigeration, in most cases inadequate, or none at all.

Meeting the requirements that the housewife makes of the refrigerator and the accommodating it to her every-day seemingly trivial tests are big factors in the sale of refrigerators into these 20,000,000 homes.

The refrigerator has been recommended to the housewife for its health preservation through the sanitary condition of the food served from it; for its convenience in not having to be re-iced; for the lessening of work in entertaining; for the novel desserts it will make; for the economy of buying in quantity which it allows; all of which recommendations proved sound.

Another advantage, and not a small one in the kitchen, is being able to keep the small left-overs until such time as they fit in with the menu of the day. These left-overs seem a small amount each day when being disposed of, but in a short time, gain a place in food expenditure and in loss of time in preparation of the food which is later thrown out.

This advantage, as the others, has a sound scientific basis that is convincing to the housewife. A test which was conducted by the Ekroth Laboratories, New York City, gives some valuable information in this line. The test was conducted with a General Electric refrigerator and an ice cooled refrigerator.

Temperature of the electric refrigerator throughout the test averaged 41.7

degrees; that of the ice cooled refrigerator, 53.4 degrees. The room temperature averaged 75.6 degrees.

Samples of food were divided into two parts and one portion kept in the electric refrigerator, the other in the ice-cooled refrigerator. Bouillon kept in the electric refrigerator was in good condition and suitable as food after fourteen days. That portion kept in the ice refrigerator was sour and decomposed at the end of six days.

Orange juice kept in the electric refrigerator was sweet and retained the qualities of fresh juice after fifteen days, while that in the ice-cooled refrigerator was decomposed and showed a moldy growth at the end of nine days.

Roast beef remained in wholesome condition through twelve days in the electric refrigerator.

A little study of any cook book discloses a number of recipes which allow substitution of ingredients and recipes which call for small amounts of several ingredients.

Left-over vegetables probably accumu-

### ANY FRUIT CAN BE USED IN FRUIT MOUSSE

Prepare 1 cup crushed fruit. Add one-third cup sugar, and 3 tablespoons corn syrup.

Dissolve 1 teaspoon gelatin in 1 tablespoon water and add. Place in refrigerator tray until it begins to thicken, then add to ½ pint cream beaten stiff.

Place in refrigerator tray to freeze.

### MIXED FRUITS COMBINE WELL IN SALAD

Dissolve 1 teaspoon gelatin in 3 tablespoons syrup from canned fruit, placing on stove to dissolve.

Add one-third cup mayonnaise dressing.

Beat into two-thirds cup cream beaten stiff.

Fold in 1½ cups fruits cut in small pieces.

Add salt and sugar, depending on kind of fruit used.

Serve on lettuce leaf with favorite dressing.

late more quickly than any other portion of the food. Salads, soups, and vegetable combinations solve much of this.

Bouillon on hand in the refrigerator, possibly made the first of the week when there is usually special meat on the menu, could be used at any time during the week, when sufficient vegetable left-overs accumulate. But the use of vegetable soup, using bouillon as a base, does not exhaust the possibility of vegetables in soup. The cream of vegetable soups that the cook book offers makes a delightful variation in the entree for the meal.

The vegetables used in salads are decidedly unlimited. A combination of vegetables with a tart French dressing served on a crisp lettuce leaf shows no relation to the left-over shelf in the refrigerator.

For the use of the left-over fruits and fruit juices, the housewife needs only consult a recipe book of frozen desserts

and frozen or chilled fruit salads and chances are she can find a recipe ready prepared, or certainly one that with little change will use the left-overs on her refrigerator shelf.

The problem of the Sunday roast has always been that of serving it with enough variety that the family will not tire before the meat spoils. With the allowance of longer time for using the meat, the meat left-over problem becomes inconsequential.

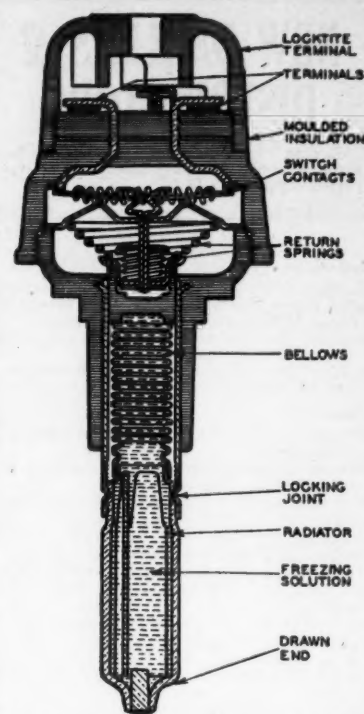
### BACTERIA INCREASE 150 TIMES AS FAST AT 70° AS AT 50°

A circular issued in 1925 by the Agricultural Experiment Station of Purdue University tells of tests on ice refrigerators. Experiments were made to determine if the housewife gets greatest efficiency from the refrigerator.

Temperature effect on milk souring showed a sample held at 98 degrees souring in 12 hours; at 75 degrees in 35 hours; and 55 degrees at 82 hours.

Samples of milk were held at 50 degrees and 70 degrees for 24 hours. Bacteria reproduced to 150 times as many in the sample held at 70 degrees as that held at 50 degrees.

Temperatures in the refrigerator varied from 51.8 degrees to 57.0 degrees. Bacterial analyses were made at the end of 3, 6, 9 and 24 hours. The initial count was 5,900 per cubic centimeter. The counts were, at the times respectively: 57 degrees, 12,700, 14,100, 28,000, 370,000; 53.6 degrees, 8,000, 13,000, 19,000, 193,000; 51.8 degrees, 5,900, 7,900, 7,900, 24,000; 55.0 degrees, 5,900, 8,500, 10,000, 152,000; 55.5 degrees, 6,500, 8,500, 11,500, 170,000.



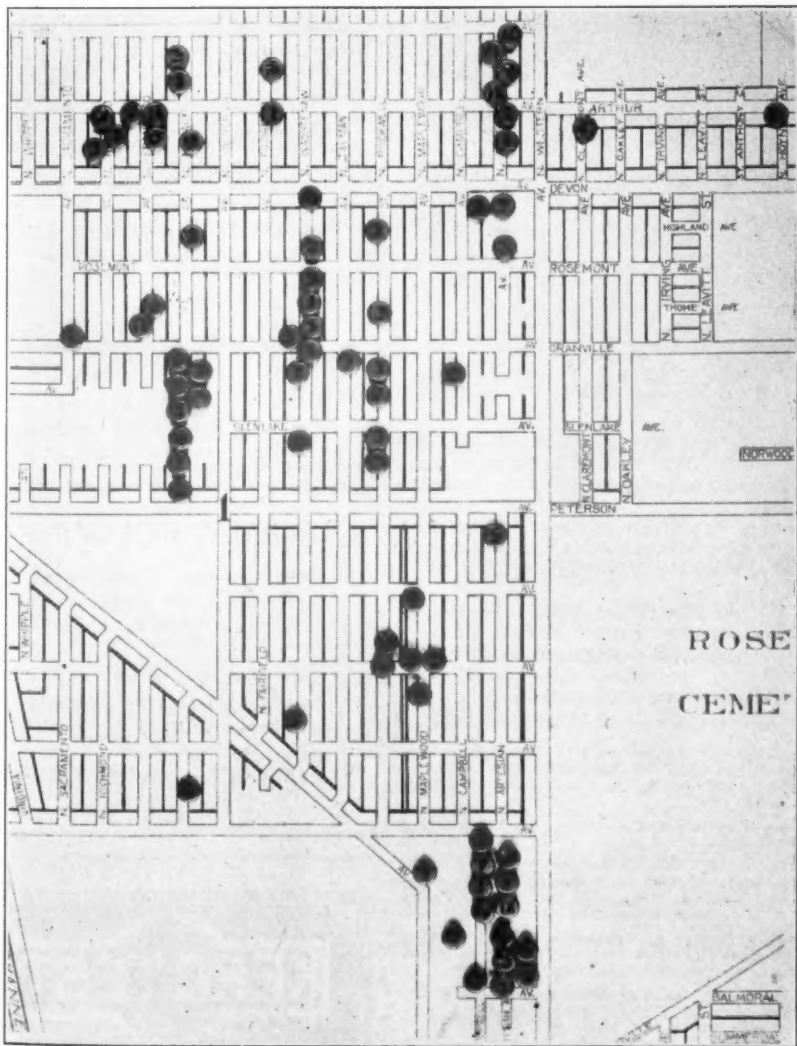
### RANCO THERMOSTAT CONTROLS

for Household Refrigerators, Ice Cream Cabinets, Water Coolers, etc., maintain an even temperature. Once installed, no further adjustments necessary. Now standard equipment with many manufacturers.

Write for information

THE AUTOMATIC RECLOSING CIRCUIT BREAKER COMPANY  
COLUMBUS, OHIO, U. S. A.

### Installs 553 Norge Units in 3 Square Miles of Chicago Territory



This map represents an area in Chicago which is approximately two miles in width and one and one-half miles in length. There are ninety buildings represented, in which 553 apartments are equipped with Norge refrigerators. The numbers appearing on the markings show the number of installations at that location. The installations were made by the Norge Chicago Corp., which is comprised of R. J. Mott and V. V. Dawson. Harry A. Mann, salesman for the company, specializes in apartment house sales.

Manufacturers - Distributors - Dealers

## Step Way Ahead This Year

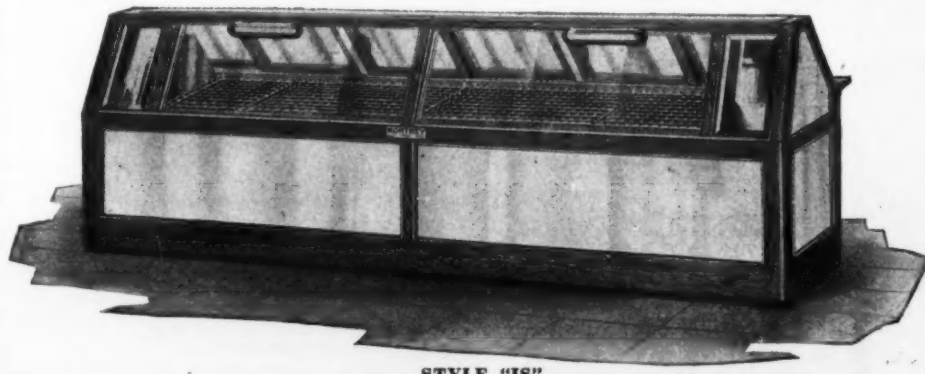
YOU CAN CLOSE MORE SALES THIS YEAR IF YOUR EQUIPMENT CONTAINS



They Positively Eliminate De-Frosting--Dehydration and Cut Operating Costs Way Down--Get the Facts and Proof--Send for Catalog

PIERSON-LARKIN REFRIGERATING CORP'N  
ATLANTA - GEORGIA

## THE FAMOUS NORTHEY "MAGNET"



DISPLAY STORAGE CASE

The greatest case yet made for ice or other systems. Best circulation of them all. Cost more -- worth more.



Best Buy for Chain Stores, Equally Good for Village or City Store  
HIGH GRADE ONLY SALES AGENTS WANTED

NORTHEY MANUFACTURING CO. Waterloo, Iowa



## NEW DEALERS & DISTRIBUTORS

Recent appointments announced by manufacturers and new sales outlets reported from the field.

### Serve!

#### Distributors:

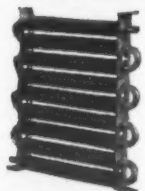
Gas Service Co., Kansas City, Mo. (Electrolux)  
Baton Rouge Electric and Machine Works, Inc.,  
Baton Rouge, La. (Serval-Electrolux)  
Southern Indiana Gas & Electric Co., Evans-  
ville, Ind. (Serval-Electrolux)  
National Music Stores, Inc., Syracuse, N. Y.  
(Serval-Electrolux).

#### Dealers:

Arkansas Valley Gas Co., Arkansas City, Kans.  
(Electrolux)  
Western Distributing Co., Augusta and Eldo-  
rado, Kans. (Electrolux)  
Carthage Gas Co., Carthage, Mo. (Electrolux)  
Union Public Service Co., Cherryvale, Kans.,  
Merriam, Kans., Nowata, Okla., Ottawa,  
Kans., and Parsons, Kans. (Electrolux)  
Girard Gas Co., Girard, Kans. (Electrolux)  
Hutchison Gas Co., Hutchison, Kans. (Elec-  
trolux)  
Joplin Gas Co., Joplin, Mo. (Electrolux)  
Webb City & Cartersville Gas Co., Webb City,  
Mo. (Electrolux)  
Kansas City Gas Co., Kansas City, Mo. (Elec-  
trolux)  
Wyandotte County Gas Co., Kansas City, Mo.  
(Electrolux)  
Consumers Gas Co., Miami, Okla. (Electrolux)  
Newton Gas Co., Newton, Kans. (Electrolux)  
Pittsburg Gas Co., Pittsburg, Kans. (Electro-  
lux)  
Capital Gas & Electric Co., Topeka, Kans.  
(Electrolux)  
Wichita Gas Co., Wichita, Kans.  
Evans Bros., Ltd., Alexandria, La. (Serval).  
F. E. Eldridge, Framingham, Mass. (Serval).  
Leon Forand, Needham, Mass. (Serval).  
T. B. Rayl Co., Detroit, Mich. (Electrolux).  
Good House Keeping Shop, Detroit, Mich.  
(Electrolux).  
J. L. Hudson Co., Detroit, Mich. (Electrolux).  
Good House Keeping Shop, Racine, Wis.  
(Serval).  
J. Wallace Grace Co., Wakefield, Mass. (Elec-  
trolux).  
Corkum Bros., Wellesley, Mass. (Serval).  
Halley Electric Appliance Co., Lynn, Mass.  
(Serval).  
Independent Electric Co., Muskegon, Mich.  
(Electrolux-Serval).  
Home Service Co., Asheville, N. C. (Electro-  
lux).  
El Paso Electric Co., Colorado Springs, Colo.  
(Electrolux-Serval).  
Foster-Barker Co., Santa Anna, Calif. (Elec-  
trolux-Serval).  
Sonora Motor Co., Sonora, Texas (Electrolux).  
Niagara Falls Gas & Electric Co., Niagara  
Falls, N. Y. (Electrolux).  
Morrison Furniture Co., Rock Springs, Wyo.  
(Electrolux).  
Ft. Smith Gas Co., Ft. Smith, Ark. (Electro-  
lux).  
W. J. Armour, Rocksprings, Texas (Electro-  
lux).

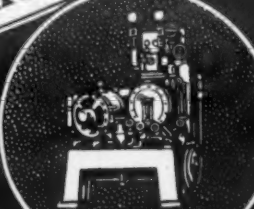
Five Minutes from Juarez, Old Mexico  
**A Cordial Welcome**  
**Awaits You at**  
**EL PASO'S Newest and Finest**  
**HOTEL**  
**HUSMANN**  
**"On the Plaza"**  
**EL PASO, TEXAS**  
**"You'll be Surprised"**  
**300 ROOMS-300 BATHS-ALL OUTSIDE**  
**222 UP**  
HARRY L. HUSMANN, PRES. HARVEY DAY, MGR.

## Specify ROME CONDENSERS



One Piece Construction  
**Rome Turney Radiator Co.**  
ROME, N. Y.

## BRUNSWICK-KROESCHELL REFRIGERATION



**32**  
years of  
continuous and  
successful application

Capacities: 500 lbs. refrigerating effect and  
up, covering the entire field of applied refrig-  
eration.  
Refrigerants: Ammonia; Carbon Dioxide;  
Methyl Chloride.

**BRUNSWICK-KROESCHELL COMPANY**  
Refrigerating & Ice Making Machinery  
NEW BRUNSWICK, N.J. - CHICAGO, ILL.

### Copeland

#### Distributors:

Horton Electrical Co., Inc., 117 W. Chapel  
Hill St., Durham, N. C.  
Summers Electrical Co., 112 W. Martin St.,  
Raleigh, N. C.

#### Dealers:

Cushing Electric Co., Cushing, Okla.  
Miner Electric Co., Sapulpa, Okla.  
Weller Electric Co., Hillsboro, Ill.  
E. C. Hogendohler & Co., Olmstead, Ill.  
Fred Vetter, Chestertown, N. Y.  
The Wasser Shops, 222 N. 8th St., Allentown,  
Pa.  
Williams Music Store, Shelbyville, Ind.  
Ray Cole, Smith Center, Kans.  
H. J. Blenker, Albany, Minn.  
Electric Service Co., 123 North Orange St.,  
New Smyrna, Fla.  
Arel & Berube, Northampton, Mass.  
Teves Joaquin, Honolulu, T. H.

### Sparklets, Inc., New York, N. Y.

#### Distributors:

Kelvinator-St. Louis Co., St. Louis, Mo.  
Cerveceria Cuauhtemoc, S. A., Monterrey, N.  
L. Mexico  
Warren-Whaley Electric Co., Monticello and  
24th Sts., Norfolk, Va.  
Hughes Bros. Mfg. Co., Dallas, Tex.  
Moore & Evans, 218-224 So. Wabash Ave.,  
Chicago, Ill.  
Icelet Corp., 1102 Harvey St., Omaha, Nebr.  
M. S. Gooderham Sales Co., 1165 Bay St.,  
Toronto, Canada.  
Florida Electric Refrigeration Co., St. Peters-  
burg, Fla.  
B. K. Sweeney Electrical Co., 13th and Broad-  
way, Denver, Colo.  
Electric Light & Refrigeration Co., Salt Lake  
City, Utah.  
Arch Electric Co., Inc., Portland, Ore.  
Electric Refrigerator Co., Spokane, Wash.  
General Electric of Cuba, Havana, Cuba.

#### Dealers:

Narrangansett Machine Co., Pawtucket, R. I.  
Wisconsin Electric Refrigerator Co., Madison  
Wis.  
Columbus Electric & Power Co., 1801 2nd Ave.,  
Columbus, Ga.  
Blackstone Valley Gas & Electric Co., Woon-  
socket, R. I.  
F. B. Connelly Co., Billings, Mont.  
Nebraska Power Co., Omaha, Nebr.  
Dixie Electric Co., Lafayette, La.  
Automatic Equipment Co., 31-33 Broadway,  
Youngstown, Ohio.  
A. W. Fairchild & Co., Providence, R. I.  
Worcester Electric Light Co., 11 Foster St.,  
Worcester, Mass.  
A. Pochman Dept. Store, Petoskey, Mich.  
Appalachian Electric Power Co., Roanoke, Va.  
Renan C. Baum, Traymore Bldg., Oil City, Pa.  
Toledo Edison Co., Jefferson and Superior Sts.,  
Toledo, Ohio.  
Fairmont Eco-Thermal Co., 221 Jackson St.,  
Fairmont, W. Va.  
Florida Power & Light Co., 102 Ingraham  
Bldg., Miami, Fla.  
Tidewater Power Co., Wilmington, N. C.  
Ernest W. Osborn, 509 Linden St., Scranton,  
Pa.  
Gee & Hawkins, 208 Rock St., Fall River,  
Mass.  
Jersey Central Power & Light Co., 501 Grand  
Ave., Asbury Park, N. J.  
W. W. Welliver Hardware Co., Danville, Pa.  
Edison Electric Appliance Co., 5800 W. Taylor  
St., Chicago, Ill.  
Mountain States Power Co., Albany, Ore.  
Edison Electric Appliance Co., Dallas, Tex.  
Indianapolis Power & Light Co., 48 Monu-  
ment Circle, Indianapolis, Ind.  
Spokane Gas Co., Spokane, Wash.  
Champion Electric Refrigeration Co., 3325  
Lindell Blvd., St. Louis, Mo.  
Queens Borough Gas & Elec. Co., Far Rock-  
away, N. Y.  
Alkenhead Hardware, Ltd., 17 Temperance St.,  
Toronto, Canada.  
Clothing, Inc., 834 Pine St., Muskegon, Mich.  
Key City Gas Co., Dubuque, Iowa.  
Southern Ohio Electric Co., Athens, Ohio.  
Shartenberg & Robinson Co., Pawtucket, R. I.

### Kelvinator of Canada, Ltd., London, Ont.

#### Dealers:

C. Robitaille, Enr., 320 Rue St. Joseph, Quebec,  
P. Q.  
Kelvinator Distributors, Ltd., 526 Main St.,  
Moose Jaw, Sask.  
W. J. Beer, Exeter, Ont.  
Paul Desrosiers, Matane, Quebec.  
Keenan & Hayes, LaTuque, Quebec.

## CONVENTION DATES

American Electrochemical Society, annual meet-  
ing, Toronto, Ont., Canada, May 27-29, Colin  
G. Pink, Columbia University, New York, N. Y.

American Institute of Electrical Engineers, re-  
gional meeting, Cincinnati, Ohio, March 20-  
22, F. L. Hutchinson, 33 W. 39th St., New  
York, N. Y.

Regional meeting, Dallas, Tex., May 7-9, F. L.  
Hutchinson, 33 W. 39th St., New York, N. Y.

American Institute of Chemical Engineers, re-  
gional meeting, Dallas, Tex., May 7-9, F. L.  
Hutchinson, 33 W. 39th St., New York, N. Y.

American Society of Agricultural Engineers, an-  
nual meeting, Dallas, Tex., June 17-20, Ray-  
mond Olney, St. Joseph, Mich.

American Society of Refrigerating Engineers, 16th  
Western meeting, State College, Pa., June  
20-22, D. L. Fiske, 37 W. 39th St., New York  
N. Y.

Arizona Utilities Association, annual meeting,  
Tucson, Ariz., April 18-20, L. C. McCullough,  
134 S. Central Ave., Phoenix, Ariz.

Association of Iron & Steel Electrical Engineers,  
annual meeting, Pittsburgh, June 10-20, J. F.  
Kelly, 1007 Empire Bldg., Pittsburgh, Pa.

Arkansas Utilities Association, Hot Springs, Ark.,  
April 30 to May 3, R. I. Brown, Arkansas  
Power & Light Co., Little Rock, Ark.

Canadian Electrical Association, annual meeting  
St. Andrews-by-the-Sea, N. B., June 19-21, H.  
W. Lyster, Power Bldg., Montreal, Que.

Indiana Electric Light Association, annual meet-  
ing, Gary, Ind., May 1-3, Wm. Stokes, secy.,  
1547 Consolidated Bldg., Indianapolis, Ind.

Institute of Radio Engineers, annual meeting,  
Washington, D. C., May 13-15, Alfred N. Gold-  
smith, 37 W. 39th St., New York, N. Y.

National Association of Mfrs. of Heating and  
Cooking Appliances, annual meeting, New  
York, N. Y., May 8-9, A. W. Williams, secy.,  
52 W. Gay St., Columbus, Ohio.

National Electric Light Association, Middle  
West Geographic Division, Hotel Fontenelle,  
Omaha, Nebr., April 25-26, T. A. Browne,  
1519 "C" St., Lincoln, Nebr.

Southwestern Geographic Division, Hot Springs  
National Park, Ark., April 30-May 3, S. J.  
Ballinger, secy., San Antonio, Tex.

Southeastern Division, Asheville, N. C., May  
8-10, C. W. Killian, Wynn-Cloughton Bldg.,  
Atlanta, Ga.

Annual convention, Atlantic City, June 3-7, A.  
Jackson Marshall, secy., 420 Lexington Ave.,  
New York, N. Y.

East Central Division, Louisville, Ky., May 7-10,  
D. L. Gaskill, Greenville, Ohio.

## Don't Wear an Apologetic Expression, You're Doing the Lady a Service

### Make It Apparent That You're Offering the Greatest of Household Conveniences

By J. M. Millhop, Electric Utilities Corporation,  
General Electric Distributors, Detroit

"HELLO lady, do you want to buy an electric refrigerator today?" "No, thank you." "What's you use'n, ice?" This was just about the approach used by a salesman ahead of me the other day while making a canvass. Of course, you would be surprised if I told you the company he was representing, but it is a reliable concern and one that schools its salesmen in approaches and salesmanship also. He was not taught that sort of an approach. The chances are that he knew better, too—probably he wasn't giving much thought to his work, and one thing sure is that he didn't understand the house to house business. He is flotsam-jetsam type—the usual response to newspaper ads.

Now, it is not the wording of this approach that I wish to call to your attention; it is the apologetic attitude of his. He was probably content. He knew what the lady was going to say to his question. He expected her to say "No" and that is just what he got. He got just what he expected.

"You'll say that none of your men are using this approach, but can you say that they do not have the apologetic attitude? Do you know that there are dozens of men in every community soliciting business from house to house today whose approaches are almost as ridiculous—they are too apologetic. But, strange to say, they do get some business, and they are usually the calibre that can talk if the prospect does not run out of

questions. The interview ends just as soon as the prospect runs out of things to ask about.

There is no occasion to apologise for your calling at the door, to tell the housewife how much she will benefit by the use of electric refrigeration and you do not have to tell her that the food in her ice box is *not fit to eat* either.

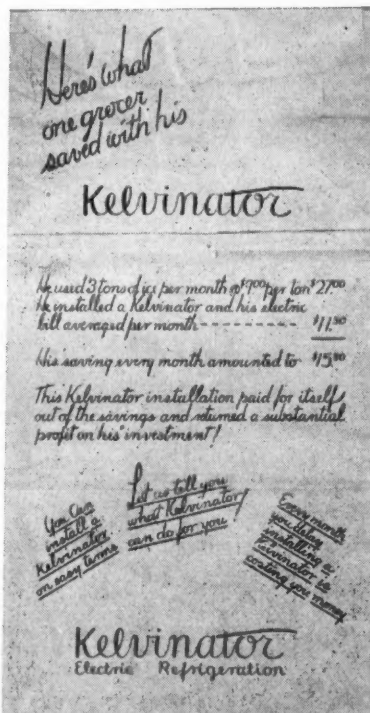
Some sales managers have worked out some very good approaches which they can use very well and because of their ability to use it expect each salesman to use it word for word the same. This a salesman cannot do, as he must use his own personality in order to make his approach effective.

Usually one does not have to stand in line to talk to a housewife as salesmen are accustomed to do when calling on purchasing agents, but housewives are pretty good judges of men and products by the many approaches made to them.

It would seem that there is a tremendous opportunity for salesmen who have a pleasing smile, are courteous, and have the firm conviction that they are calling to offer the mistress the greatest household convenience of all times—one that she will use constantly every hour of each day and for many years to come.

"Are you enjoying the benefits of electric refrigeration?" is the better attitude to use and if salesmen will use the "You" attitude they will get more interviews.

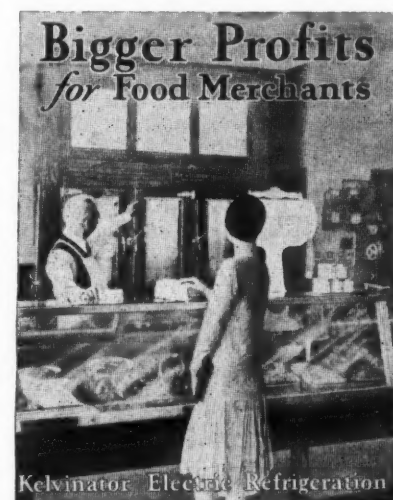
## A Sugar Sack Carries Kelvinator's Message to the Grocer



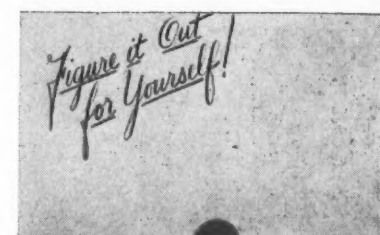
Above: The sugar sack unfolded.

Right: Folded and sealed for mailing to prospects.

"Figure it out for yourself," printed on an ordinary sugar sack is used by Kelvinator Corp., in sending a message to the grocer. The sack is folded so this is on the outside together with the mailing address. When unfolded the remainder of the sack carries the story of what one grocer saved by installing a Kelvinator electric refrigerator. It is all noted down on the sugar sack much as it would appear if the salesman had picked up a sack for notations while talking to the grocer. It fits right



Eight-page booklet for food merchants.



in with the grocery environment and the grocer feels that it is from a company who understands his business needs.

For a follow-up of this a large facsimile of a grocer's sales slip which carries a strong testimonial written by a grocer, is used.

"Bigger Profits for Food Merchants" is an eight-page booklet carrying the story of the economy and convenience of the Kelvinator together with descriptions and illustrations of installations.

Michigan Section, annual meeting, Mackinac Island, July 1-3, Herbert Silverster, secy., Edison Bldg., Ann Arbor, Mich.

National Electrical Manufacturers Association, annual meeting, Hot Springs, Va., May 20-25, A. E. Waller, 420 Lexington Ave., New York, N. Y.

National Electrical Wholesalers Association, convention, Hot Springs, Va., May 27-31, E. Donald Tolles, mgr. dir., 165 Broadway, New York, N. Y.

National Fire Protection Association, annual meeting, Memphis, Tenn., May 13-16, A. R. Small, 109 Leonard St., New York, N. Y.

New York Electrical Society, monthly meetings, New York, N. Y., April 3, May 1, H. E. Farrer, 29 W. 39th St., New York, N. Y. Demonstration and exhibits.

North Central Electric Association, Pequot, Minn., June 23-25, J. W. Lapham, 803 Plymouth Bldg., Minneapolis, Minn.

Northwest Electric Light & Power Association, annual meeting, Seattle, Wash., June 26-29, Berkeley Snow, 1208 Spaulding Bldg., Portland, Oregon.

Pacific Coast Electrical Association, annual convention, Del Monte, Calif., June 19-22, S. H. Taylor, 447 Sutter St., San Francisco, Calif.

Southwestern Public Service Association, annual meeting, Hot Springs, Ark., April 30-May 3, E. N. Wiles, 403-4 Slaughter Bldg., Dallas, Tex.

Trade Association Executives, annual meeting, New York, N. Y., May 27, O. M. Porter, 18 E. 41st St., New York, N. Y.

Utilities Association of Secretaries, electric section, Wausau, Wis., July 18-19, J. N. Cadby, 432 Broadway, Milwaukee, Wis.

Western Society of Engineers, annual meeting, Chicago, Ill., June 5, E. S. Nethercut, 53 W. Jackson Blvd., Chicago, Ill.

Westinghouse Agent-Jobbers' Association, annual meeting, Hot Springs, Va., June 10-15, Karr Parker, Buffalo, N. Y.

### EXHIBITIONS

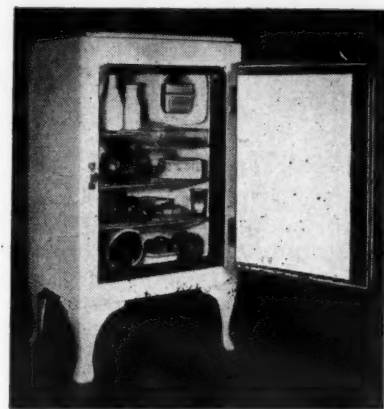
Canadian National Radio Exhibition, Coliseum, Toronto, Ont., Canada, May 27.

Home Complete Exhibition, Indiana State Fair Grounds, Indianapolis, Ind., April 4-13. Exhibits and features.

Own Your Home Exhibition, Madison Square Garden, New York, N. Y., Feb. 20-27, H. M. Sexton, 512 Fifth Ave., New York, N. Y. Exhibits. Chicago exposition, Chicago, Ill., April 29-May 11, H. M. Sexton.

## USES PATENTED COMPOSITION FOR FACSIMILE COMMODITIES

Perishable commodities are being re-produced by the Reproductions Co., Jamaica Plain, Mass. This facsimile food is made of a patented composition which withstands a temperature of 140 degrees. The essential requirement of a refrig-



erator display is to bring out the fine mechanical points of the machine, yet make it appear natural and home like. The only thing that makes a refrigerator look home like is filling it with food. Since the doors must be left ajar for display purposes, reproductions of perishable foods are being used extensively.

## DIRECTORY CORRECTIONS & ADDITIONS

THE M. B. AUSTIN CO.  
108-116 S. Desplaines St., Chicago, Ill.  
Mfrs. of conduit fittings and wiring devices.

JOHN BATH & CO., INC.  
8 Grafton St., Worcester, Mass.  
John Bath, pres.; J. Chester Bath, vice pres.; Stanley W. Bath, secy.; Chester Bath, sales mgr.; Robert E. Lamb, adv. mgr.; E. A. Walker, chief engr.  
Mfrs. of thread taps, internal micrometer, master reference rings, gauges, and thread rolling dies.

THE BUSH MANUFACTURING CO.  
100 Wellington St., Hartford, Conn.  
Mfrs. of seamless copper tubing condensers with individual fins.

THE BASTIAN-BLESSING CO.  
240-258 E. Ontario St., Chicago, Ill.  
Chas. L. Bastian, pres.; L. G. Blessing, vice pres.; gen. mgr.; A. C. Krein, treas.; E. N. Krein, secy.; Ralph W. Cray, gen. sales mgr.  
Mfrs. of soda fountains, soda fountain parts, and specialties for oxygen, acetylene and carbonic gas industries.

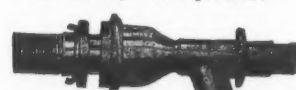
DRYICE CORP. OF AMERICA  
50 E. 42nd St., New York, N. Y.  
G. C. Cusack, gen. sales mgr.  
Trade name—DRY-ICE.  
Mfrs. of carbon dioxide ice.

GRAY, McLEAN & PERCY, INC.  
313-15 Third Ave., S. Seattle, Wash.  
Mfrs. of soda fountains, store fixtures, bakers' and confectioners' machinery, tools, and supplies.

NAGLE'S SHEET METAL WORKS  
Herkimer, New York  
Mfrs. of submerged type farm milk cooler for use with electric refrigeration.

## DRINKING WATER FAUCETS

for  
Refrigerators - & Water Coolers  
New model now available for  
use on city water pressure



**Cordley & Hayes**  
1 Leonard St. New York City

## QUALITY COUNTS!

Your customer knows that a high-quality finish goes right through to construction and materials.

There is no finer finish than Ferro Porcelain Enamel. Write for booklet.

**The Ferro Enamel Supply Co.**  
CLEVELAND, OHIO

## KERO TEST

**FORGED BRASS VALVES**  
for Mechanical Refrigeration

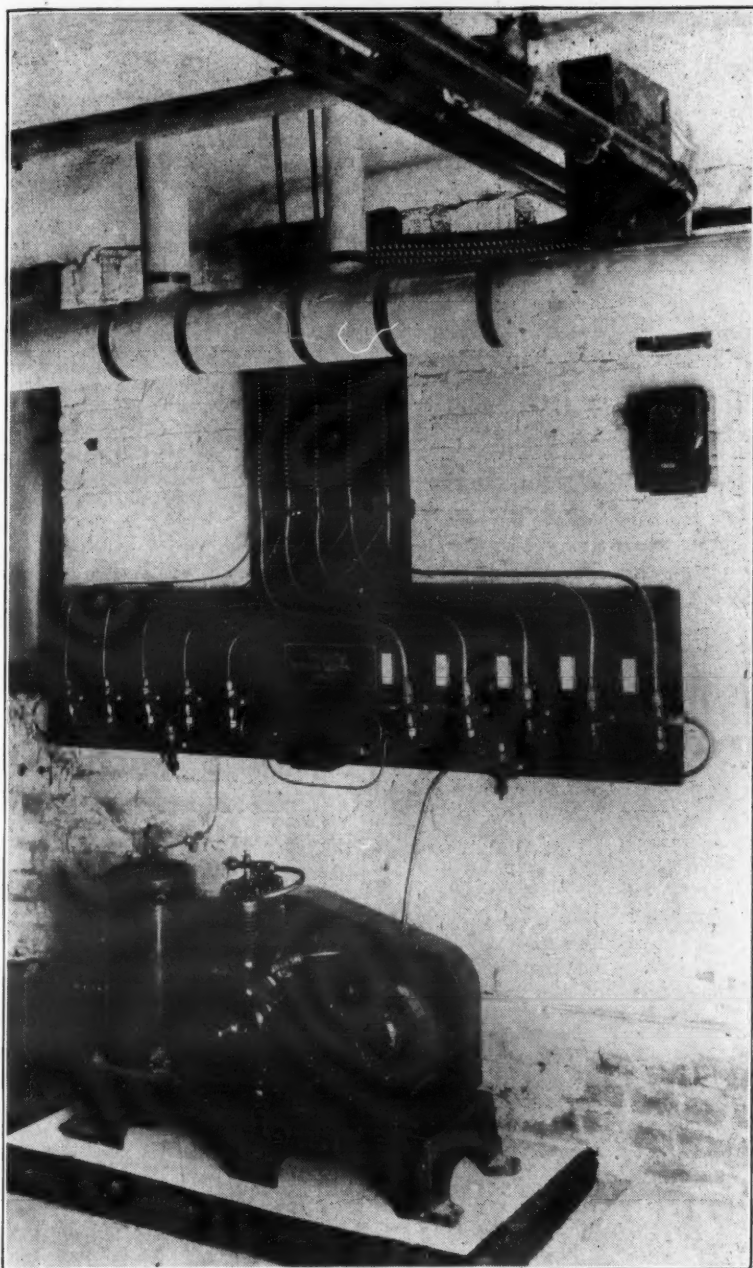
Quality Shut-off and Cylinder valves in any standard designs or to your specifications.

KEROTEST MANUFACTURING CO.  
2525 LIBERTY AVENUE  
PITTSBURGH, PENNA.

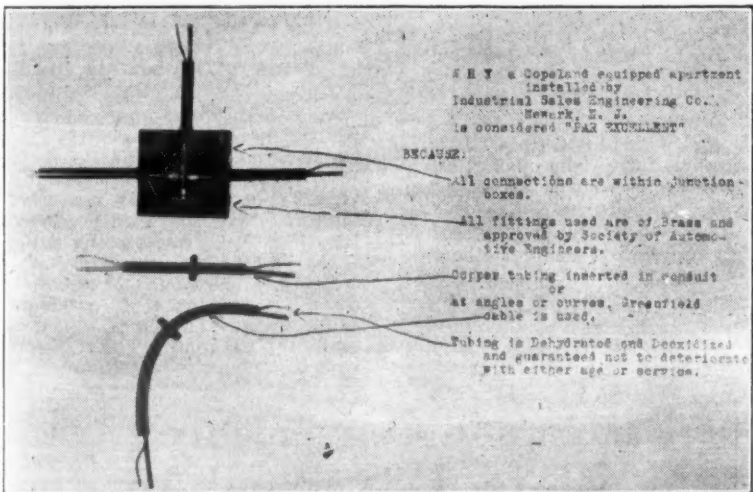


# INSTALLATION AND SERVICE

## A "Safety Plus" Installation Worked Out by Copeland Dealer



Installation in 16-family apartment house at Newark, N. J., by the Industrial Sales Engineering Co., Inc., Copeland dealer, with 5 risers, using three units on each riser and an extra fourth unit on one.



Close-up showing how tubing is run through conduit and how it is handled at junction points.

BECAUSE "95 per cent of the people purchasing electric refrigeration do not know what they really get or what they actually are entitled to," the refrigeration engineer should be doubly careful of his recommendations. This is the viewpoint of William Hecht, manager of the refrigeration department of the Industrial Sales Engineering Co. Inc., of Newark, N. J., which handles all business in that section of New Jersey for Copeland electric refrigeration.

"Our experience," said Mr. Hecht, "is that 95 per cent of the people purchasing electric refrigeration are not aware of what they receive or are entitled to receive for their money. If the type of cabinet pleases their eye, little interest usually is shown in the rest of the installation."

"Electric refrigeration for apartment houses may be installed at a saving of perhaps \$15 on each apartment, but the owner who has no knowledge of refrigeration does not know the difference if it is his first job. Later he will find that proper care and a little more money spent at the beginning is certain to avoid grief at the end."

"In pursuance of this policy, the Industrial Sales Engineering Company in making Copeland installations follows these rules:

"Every inch of tubing is inserted in conduit (except panel board).

"All connections are within junction boxes.

"Only fittings approved by the S. A. E. are used.

"At angles or curves where conduit is not practical, Greenfield cable is employed.

"Quality of tubing is of the highest grade, being dehydrated and deoxidized and guaranteed not to deteriorate either with age or service.

"Careful survey is made and checked. All figures are checked by the engineer to insure proper capacity for refrigeration and condensing unit commensurate with the apartment need. Even then an extra precaution is taken by supplying 20 per cent over the maximum needs.

"Neatness in workmanship is insisted upon."

A typical installation of this kind is that recently made in a 16-family apartment house at 76 Nadan Avenue, Newark, N. J. In this installation a Model W Copeland condensing unit is used with five risers, each riser representing three families. There are five apartments on each floor, and adding one for the superintendent, makes 16.

## SERVICE MEN'S MANUAL ISSUED BY ABSOPURE

The General Necessities Corp., Detroit, Mich., has issued a small leather-bound Absopure Refrigerator service manual for household refrigerating machines. This manual opens with a discussion of methyl chloride as a refrigerant and its properties are adequately described. Corrosion and the use of methyl chloride in Absopure Refrigerators are also treated in this section.

The two next sections are devoted to discussions of the "Theory of Mechanical Refrigeration" and "The Refrigeration Cycle." Next the Absopure unit is described and discussed. Section D is devoted to the condensing unit and its parts. The freezing unit is next treated in the manual.

Instructions for the installation of self-contained units and remote installations are also included. The last section contains bits of general information for the service man. Eleven illustrations showing various parts of the unit, wiring connections, air circulation and refrigeration cycle are also contained in the manual.

## KELVINATOR HOLDS ICE CREAM CABINET SERVICE SCHOOL AT BOSTON

During the week of Feb. 25-March 2, the Kelvinator Corp., Detroit, held an ice cream cabinet service school at Boston, Mass. Harry Underwood, of the Kelvinator factory, conducted the school.

Those who attended the school were: E. F. Flynn, Zeno's Bakery, Bellows Falls, Vt.; Arthur Herosian and Harold Kalashian, of Kalashian Bros., Worcester, Mass.; Robert Dutch and Eugene J. Lee, Keene Ice Cream Co., Bangor, Me.; Augustine Barbiero, Naugatuck Dairy, Naugatuck, Conn.; M. A. Santos, Macomber Ice Cream Co., New Bedford, Mass.; Albert Samuelian, Dorchester Ice Cream Co., Dorchester, Mass.; A. R. Bowles, White Mt. Ice Cream Co., Lisbon, N. H.; Albert Bowen and Eugene Martineau, Nicco Ice Cream Co., Manchester, N. H.; John Wiseman, Alphonse Charron & Whitney Rawson, Wiseman Farms, Lewiston, Me.; Martin Givivan, Turner Center System, Lowell, Mass.; Charles Fisher and Everett Wilson, Lynnwood Ice Cream Co., Lynn, Mass.

## PERIODICAL INSPECTIONS MADE BY REFRIGERATOR SERVICE, INC. NOW OPERATING IN CHICAGO

The Refrigerator Service, Inc., 185 N. Wabash Ave., Chicago, is specializing in the servicing of mechanical refrigerators of any make. They have contracts with apartment and hotel owners providing for periodical inspection and adjustment of refrigerating machines.

L. H. Hoelle is president of the organization. Mr. Hoelle has been in refrigeration work for the last 20 years, and has with him men who have been associated in the industry for some time. Specialists on each type of machine are connected with the concern.

## New York Copeland Distributor Opens Series of Commercial Sales Schools

On March 8, the Copeland Refrigeration Co. of New York, Inc., distributors of Copeland electric refrigeration, held the first of a series of three commercial sales schools for all dealers and their salesmen in the New York territory. The next schools will be held on March 22 and April 5.

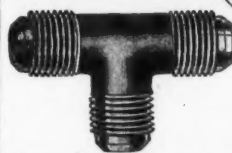
## Three Aids To Better Joints

### Imperial Tube Cutter



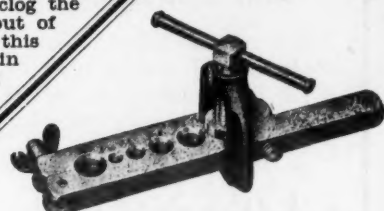
Here is a highly efficient tool for cutting copper, brass, block tin and lead tubing. It takes all sizes of tubing from 1/8" to 1/2" and makes a right-angle cut, quickly and cleanly, leaving no burrs or chips to clog the line. The tubing does not become out of round as when put in a vise. When this tool is used, tubing can be cut in half the time required by old methods and a far better job results. No. 94-F Tube Cutter, each

Brass Forgings



Accurately made to meet all the requirements of Iceless Refrigerator Manufacturers. Will not leak. Let us quote on your requirements.

\$2.50



### Imperial Flaring Tool

The Imperial Flaring Tool gives the proper flare and taper to the tubing for making up joints. A perfect flare means a tight joint, and this tool does the work in the least time and with the utmost simplicity. No loose dies—no vise necessary. No. 93-F takes tubing sizes 7/16", 3/16", 1/4", 5/16", 3/8", and 1/2", Each, \$3.00. No. 95-F takes tubing sizes 1/4", 5/16", 3/8", 1/2" and 5/8", Each, \$4.00.

IMPERIAL BRASS MFG. CO., 565 So. Racine Ave., Chicago, Ill.



Working in close touch with the electric refrigeration industry, and therefore keenly alive to the exacting requirements of manufacturers, Day-Fan Electric Co. has developed this new motor.

It is built to advanced standards of quietness, efficiency and dependability.

Brush lifting type, and mounted with rubber cushion on specially designed cradle base, it is free from electrical hum and vibration. With it we are helping both Copeland Products and Kelvinator Corporation insure silence, economy and dependability to users of their refrigerators.

Day-Fan Electric Company  
DAYTON, OHIO

M.&W.C.  
1876

LACQUERS  
ENAMELS

A Lacquer Finish that Has Stood the Test!

M & W REFRIGERATOR  
LACQUER ENAMELS

A Quality Reputation on these products has been established through actual large quantity production on Cabinets widely distributed throughout the world. Another complete M & W Finish including either Lacquer or Oil Primer followed by M & W Lacquer Enamel in White or Colors. We invite your correspondence regarding your particular problems.

MAAS & WALDSTEIN CO.

EXECUTIVE OFFICES AND PLANT, 438 RIVERSIDE AVENUE  
NEWARK, N. J.

CHICAGO OFFICE  
AND WAREHOUSE  
1115 Washington Blvd. West

LOS ANGELES OFFICE  
AND WAREHOUSE  
1212 Venice Blvd., Los Angeles, Calif.

## KULAIR COMMERCIAL CONDENSING UNITS

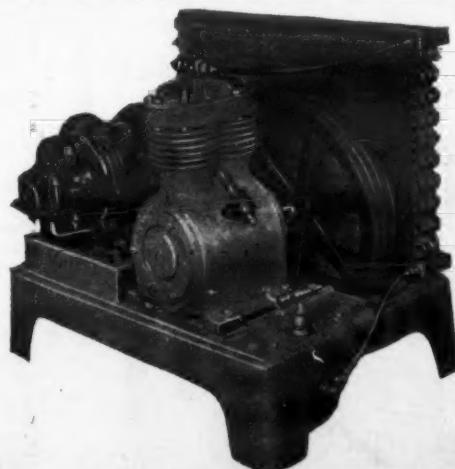
For Use With Any Practical Cooling Unit

Low, Medium or High Speed  
Multiple or Single Unit Hookup

Sulphur Dioxide or Methyl Chloride

A sensible policy product and price  
Awaits your inquiry  
Write for it

KULAIR DIVISION  
FRANKLIN AIR COMPRESSOR CORPORATION  
NORRISTOWN, PA.



No. 3000 Air Cooled 9942 BTU per  
Smaller Sizes to 1/4 Horse Power.



# NEW REFRIGERATOR CABINETS

## Mineral Wool

**Low in Thermal Conductivity and Low in Cost**

The exceptionally low thermal conductivity of Mineral Wool (6.3 B.T.U.) as determined by the U. S. Bureau of Standards, stamp it as the ideal insulating material for

### Cold Storage Construction

It assures perfect insulation and maximum efficiency at a low cost.

Mineral Wool is entirely mineral, indestructible, vermin-proof and easy to apply.

Sample and descriptive folder upon request.

**U.S. MINERAL WOOL CO.**

280 Madison Avenue, New York  
Western Connection: Columbia Mineral Wool Co., South Milwaukee, Wisconsin

**A GOOD COOLER DOOR IS MADE BETTER WITH—**



**Wirfs PATENTED "AIRTITE" GASKET**

Write for samples and prices, today.

**E. J. Wirfs Organization, Inc.**  
135 E. 17th St. • St. Louis, Mo.

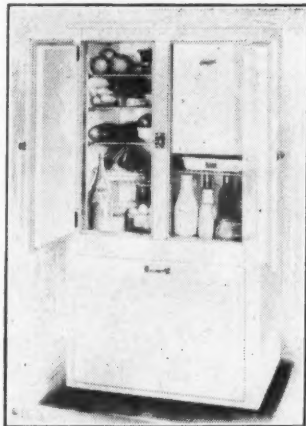
## ATTRACTIVE JUNIOR AND SENIOR MODELS OFFERED BY SEEGER

THE Seeger Refrigerator Co., St. Paul, Minn., announces its 1929 line of cabinets comprising twenty models in its senior and two junior lines. In the senior line are six models ranging from 5 ft. to 30 cu. ft., with porcelain on Armco iron for interiors and exteriors. Pure cork-board insulation is incorporated in the construction of these models.

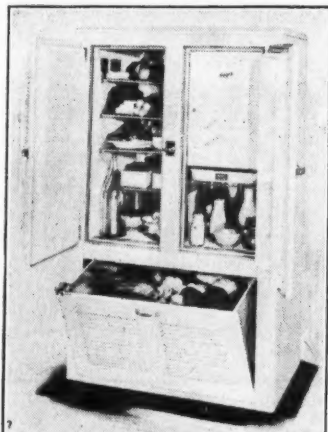
The junior all porcelain line has seven



Seeger Model L5-1



Seeger Model JP5-2



Seeger Model P7

sizes ranging from 4 ft. to 9 cu. ft., and includes two specially designed cabinets for apartments. Cork-board is also used in these models and the interior arrangements permit convenient food storage.

In the junior lacquer finish line with interiors of porcelain are seven models ranging from 4 to 9 cu. ft. These include two cabinets designed for insulation in apartments. The construction and all details of this line is identical with the junior all porcelain models.

Chromium plated hardware is used on all models; that on the senior line having a two-tone finish of contrasting dull and bright metal. On the junior line satin finished, Chromium plated hardware is standard.

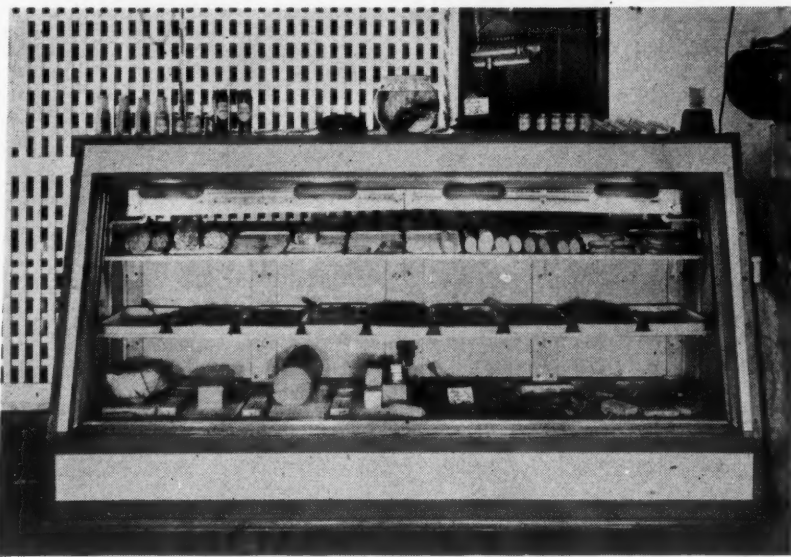
## BELDING-HALL ADDS SEVERAL NEW MODELS TO APARTMENT LINE

SEVERAL new models in sizes suitable for small homes and apartment houses are announced by Belding-Hall Co., Belding, Michigan. These refrigerators range in interior capacity from 4.6 cu. ft. to 6.5 cu. ft., and in shelf and floor area from 5.4 sq. ft. to 8.4 sq. ft. All models have lacquer exterior and white enamel interior with the exception of model K-500 which has a one-piece seamless porcelain interior.

This new line is designed especially for electric refrigeration and each cabinet is fitted with hanger bolts and sleeved outlet through which the tubing may be run.

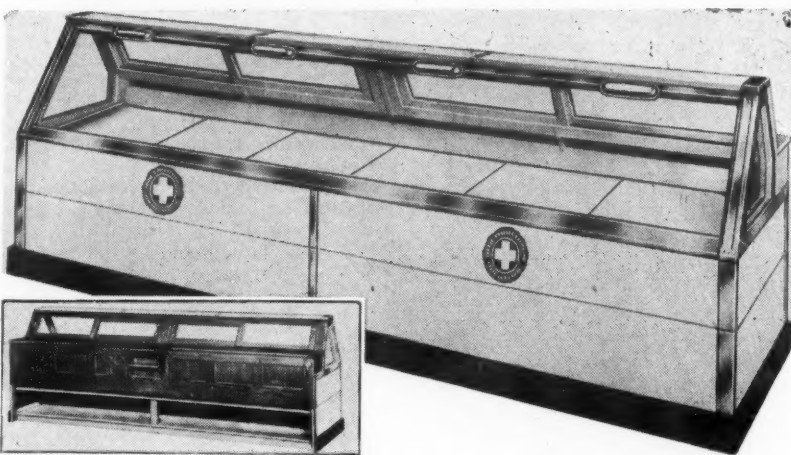
Insulation is of corkboard dipped in hydrolime and wrapped in waterproof paper. Nickel plated brass locks and hinges are standard equipment. Doors are fitted with gaskets.

## Two-Tone Porcelain Finish Enhances Display in Smoot-Holman Case



Smoot-Holman Co., Inglewood, Calif., has recently added the delicatessen display above. This model, known as the "Kool-Kase," has an all-porcelain enamel exterior of white with blue trimming. Triple plate glass windows assure clear vision of the foods displayed within.

## New Hussmann Display Case Design Cuts Down Dehydration



The New "5100 Line" Case Specially Designed for Electric Refrigeration

INCLUDED in the line of display counters, coolers and market equipment offered by the Harry L. Hussmann Refrigerator Division of the Hussmann-Ligonier Co., St. Louis, Mo., is the new "5100 line" display case of which front and rear views are pictured here.

This counter has a raffle pan, holding brine, built into the bottom of the counter. The air after leaving the cooling element where it is chilled, passes first over this brine absorbing moisture from it before entering into the food compartment. The moisture is not taken from the meat as is the usual case. By the time the air reaches the food compartment it has automatically absorbed 85 percent moisture and humidity, according to the manufacturer. Air, at this degree of humidity, will neither shrink the meat nor cause sweating.

A continuous sloping floor under the cooling element, causes cold air to tumble to the front of the case. This rapid fall of cold air across the sloping floor creates a decided suction of the warmer air from the food compartment into the cooling compartment where it is chilled and again crosses into the food compartment. Thus, a system of circulation is established in the counter.

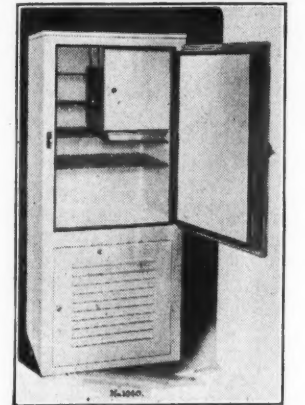
The case is provided with outside illumination. The front glasses set at a 35 degree angle so that clear vision is had from all angles.

The floor of this case is insulated with three inches of cork while the back wall of the bunker compartment has two inches.

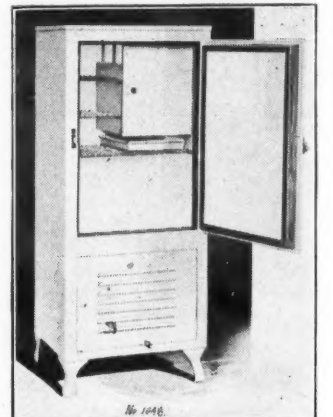
This case is especially designed for mechanical refrigeration but is adaptable for use with ice if desired.

## ALASKA BRINGS OUT NEW APARTMENT LINE IN SIZES 4-6 CUBIC FT.

THE Alaska Refrigerator Co., Muskegon, Mich., announces a complete new line of corkboard insulated refrigerators for apartment houses. These cabinets range in food storage capacity from slightly less than 4 cu. ft. to over 60 cu. ft. They are available in a wide variety of sizes so that a model may be had to fit practically any space in the apartment kitchen. The sizes are also variable by the addition of legs which are furnished at a small additional cost. A complete line of all porcelain cab-



Alaska Refrigerator No. 1060



Alaska Refrigerator No. 1048

inets from five cubic feet food storage capacity to sixteen cubic feet is also manufactured by the Alaska Company. This concern specializes in household cabinets for electric refrigeration.

## 200 ATTEND BOSTON COPELAND MEETING

More than 200 attended the sales convention of Copeland dealers from New England held by Beaudette & Graham, Boston distributors. W. D. McElhinny, vice-president in charge of sales of Copeland Products, Inc., and D. B. Henry, of the commercial engineering department, spoke.

George C. Graham, president of Beaudette & Graham, and Arthur Sullivan, sales manager, outlined the company's plans for the year. The meeting closed with a banquet at the Kenmore Hotel.

## Rex Combines Attractive Design and Convenience Features in 1929 Models for Homes and Apartments

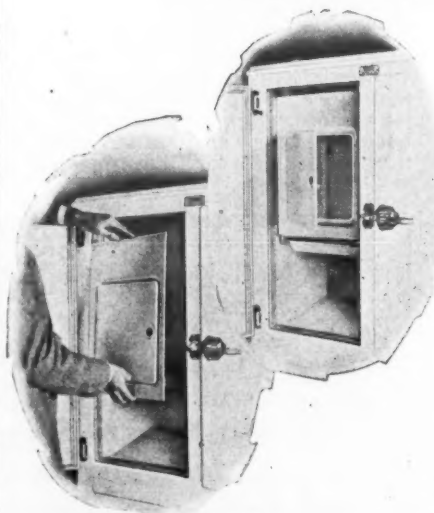
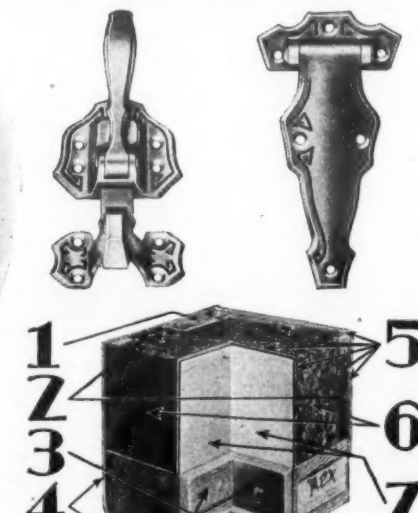


Figure 2



Sectional View of Rex Cabinet

1. Rear corner pillar
2. Air space
3. Natural wood moulding
4. Rear and side metal panels
5. Waterproof insulating paper
6. 1 1/2" to 3" pure sheet corkboard (Cork protected with waterproof coating)
7. Food compartment lining

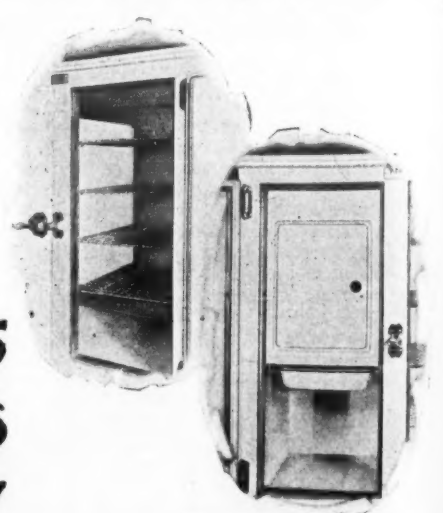


Figure 1

Note the defrosting tray immediately beneath cooling unit compartment.

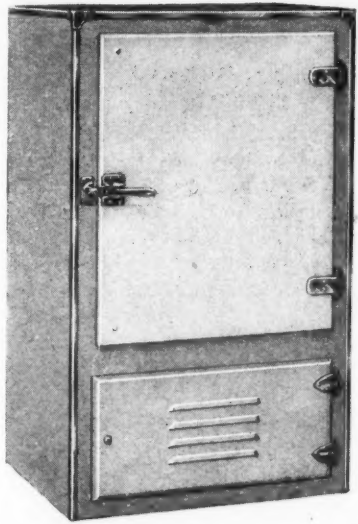
The locks and hinges used on the residence models (see Fig. 5), are of brass, heavily nickel plated with satin finish. Attractive designs are grooved in locks and hinges. In the apartment house models the hardware is of brass with polished nickel finish.



## NEW CABINETS AND ACCESSORIES

### CRYSTAL ANNOUNCES 3 NEW MODELS FOR APARTMENT HOUSES

THE Crystal Refrigerator Co., Fremont, Nebr., announces three new styles of all-steel cabinets for multiple hook-up in apartment houses. Nos. 523 and 533 have a storage space at the bottom with hinged door for vegetables or

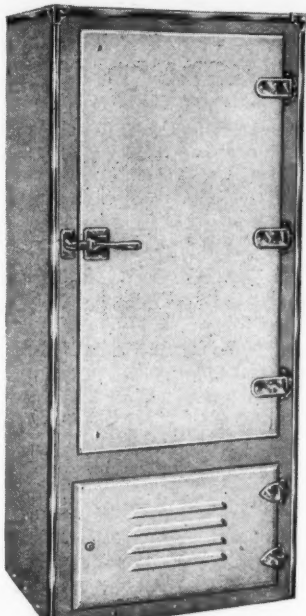


Crystal Model No. 523

miscellaneous storage. The No. 523 cabinet measures 22½ in. wide, 52 in. high and 17½ in. deep and has 5.2 cu. ft. The No. 533 measures 24 in. wide, 48 in. high and 18½ in. deep and has 5.3 cu. ft.

No. 532 is a sink-high cabinet measuring 24 in. wide, 36 in. high and 18½ in. deep, containing 5.3 cu. ft.

These new models have extra thick cork walls, patented rubber door gaskets, removable baffle fronts, porcelain defrosting pans and are finished in lacquer, either in white or colors.



Crystal Model No. 533

### FLEXO-TRAY OFFERED IN EIGHTEEN MODELS

G. M. Dwyer, Inc., 235 Curtis Bldg., Detroit, Mich., exclusive distributors for Flexo Tray, announce that at present eighteen models of Flexo Trays are being manufactured. This tray is a combination pan and grid molded in one piece of pure crepe rubber, with the walls 1-16 of an inch in thickness. It is amber colored, translucent and fits right in the metal pan, replacing the metal grid.

On factory equipment the name of the refrigerating unit may be molded in the bottom of each tray, so that each cube as it comes out bears the name of the unit in which it was frozen. At present eight manufacturers have adopted the tray as standard equipment. Four models are being manufactured for Kelvinator units, two for Copeland, four for Frigidaire, three for General Electric, two for Servel and one for Absopure, American Radiator and Rice units.

### BENJAMIN APT. LINE IS SPECIAL DESIGN FOR ELECTRIC UNITS

BENJAMIN ELECTRIC MFG. CO., Des Plaines, Illinois, has announced a complete line of all-porcelain apartment model cabinets designed especially for electric refrigeration which accommodates any standard mechanical cooling unit.

The line consists of five models varying in design as to intended use, such as with machine compartment for installation of refrigerating unit in cabinet; and without machine compartment for re-

mote installation. There is also a choice of models embodying vegetable storage compartment, drain board top, and cast iron porcelain enameled legs.

Porcelain enameled interior and exterior is standard on these models, the enamel being fused onto rust resisting iron which surrounds a kiln dried hardwood frame of rigid construction. The cabinet is designed with rounded radius corners and easy slip fit, die-drawn top trimmed in black porcelain around the top and on the edge of the door frame.

The food compartment is of seamless porcelain and rests on a level with the door-sill, facilitating cleaning. The hardware is of heavily nickel plated brass and includes a positive self acting trip-lock door fastener. The insulation is of 2 in. sheet corkboard with an additional ½ in. on the bottom of the cabinet. The door is fitted with a compression gasket which reduces the heat leakage.

### WINTERS & CRAMPTON OPEN LARGE FACTORY AT GRANDVILLE, MICH.

THE Winters & Crampton Mfg. Co., Grand Rapids, Mich., manufacturers of refrigerator hardware, announce the opening of a new plant at Grandville, a suburb of Grand Rapids. This plant which will be devoted exclusively to the manufacture of refrigerator hardware is 140x300 feet in size and contains 60,000 square feet of floor space. The most modern machinery necessary for the output of refrigerator hardware has been installed in the new factory and some of the equipment from the plant on Commerce St., S. W. Grand Rapids, has been moved into the new unit. After March 15, the executive offices of the company will be located at the new factory.

Between 250 and 300 people will be

employed at the plant as soon as production gets underway. To take care of increased production the various departments in the factory organization have been increased. The machine room contains about forty punch presses, shears and spinners, while the tool room where dies are made has about twenty benches. In the plating department there are twenty plating machines and in the tumbling department, five tumblers, eight

burnishers, one sawdust dryer and an acid mixing department. Twenty men will be employed on nickel and chrome production. The inspection department has twenty-five men on its payroll.

Officers of the Winters & Crampton Mfg. Co. recently elected are: B. R. Crampton, president; A. F. Winters, vice president and treasurer; H. E. Bouwknecht, secretary.

### KELVINATOR REPORTS BIG GAIN IN ORDERS

A 110 per cent increase in orders for February over the previous month is reported by H. W. Burritt, vice president in charge of sales of the Kelvinator Corp., Detroit.

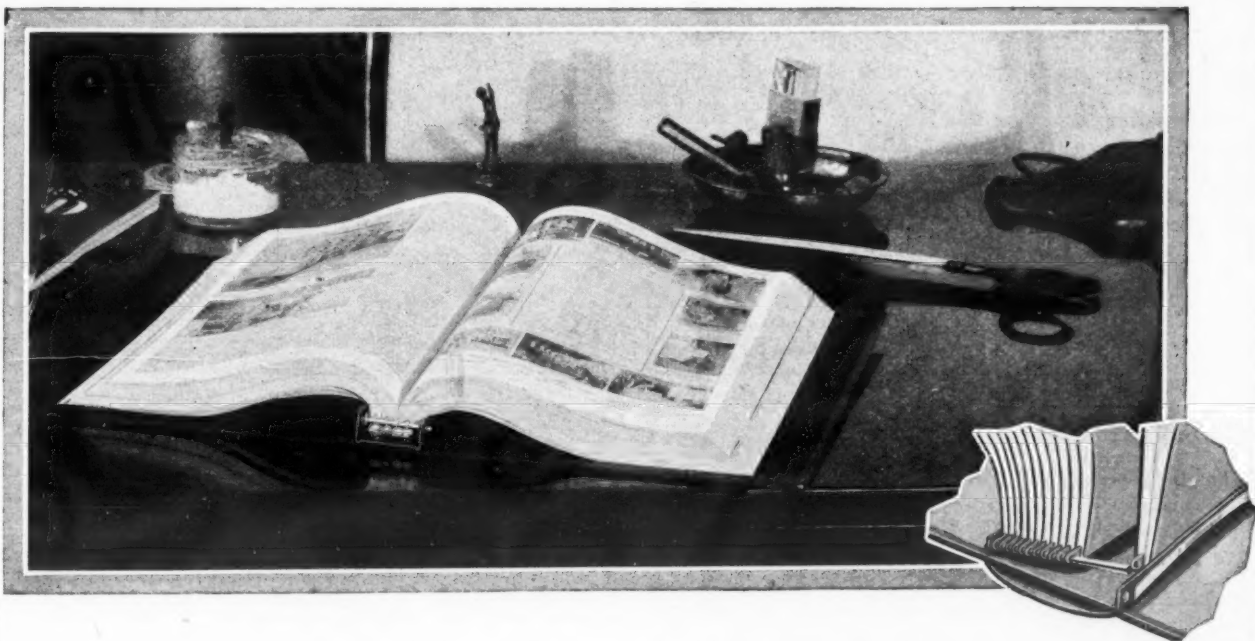
Mr. Burritt also states that immediate orders of Kelvinator equipment during the February just ended exceeded by 59 per cent the February orders of a year ago. Orders since Oct. 1, 1928, show a gain of 34 per cent over the same period a year ago.

## Valuable Information Is Worth Preserving

New Lot of Binders for File Copies  
of the News Now Available

MANY of our readers are keeping each and every issue of Electric Refrigeration News in a permanent file, so that they may have this valuable information for ready reference at all times.

For your convenience we offer two very attractive binders designed especially for Electric Refrigeration News. One style has a spring in the binding edge and it is only necessary to open the binder, pressing the backs together to insert new issues or remove those already in place. This binder looks neat whether it contains one issue or twenty-six.



The illustration will give you an idea of the style known as a multiple binder, showing the visibility of type. Also cross section of binding edge shows how the metal retaining strip is put through each issue, making it less likely that a copy may be removed.

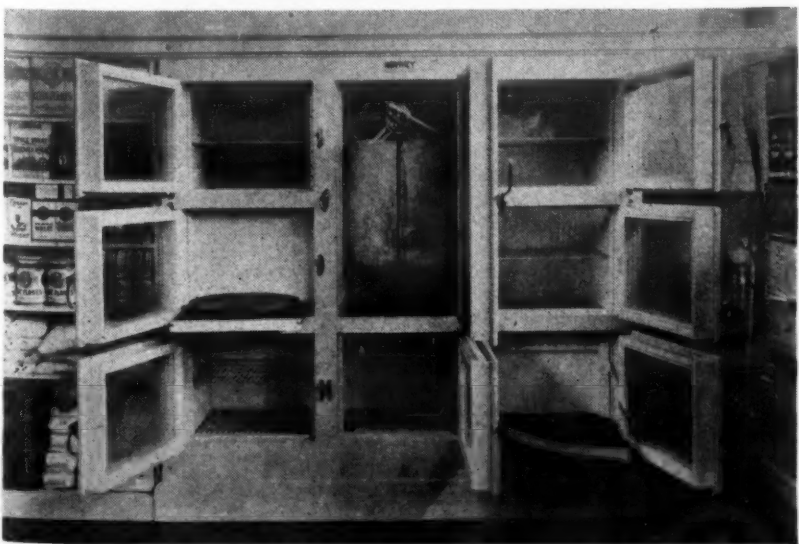
Send  
**\$3.75**

for a binder  
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or multiple  
style) for your  
file copies of  
the NEWS

Both binders have stiff board covers and are attractively bound in good quality of black imitation leather. The "spring back binder" has extra heavy covers to prevent breaking when the spring is opened. The name "Electric Refrigeration News" stamped in gold on the front cover of each type. A binder of either type will be shipped postpaid on receipt of \$3.75. Please specify whether you want "spring back" or "multiple" style.

**Electric Refrigeration News**  
550 Maccabees Building  
DETROIT, MICH.

### Northey and Kelvinator



Included in the line of commercial refrigerators offered by the Northey Manufacturing Co., Waterloo, Iowa, is the model No. 87 above which in this instance is equipped with a Kelvinator finned cooling unit.



# MANUFACTURERS ADVERTISING IN THE NEWS

## Here Are 171 Companies That Have Used *Electric Refrigeration News* for Advertising Their Products During 1928-29

- Absolute Contactor Corp., Elkhart, Ind.  
Alaska Refrigerator Co., Chicago, Ill.  
American Engineering Co., Philadelphia, Pa.  
American Radiator Co., Chicago, Ill.  
American Soda Fountain Co., Watertown, Boston, Mass.  
Ansul Chemical Company, Marinette, Wis.  
Arco Vacuum Corp., New York, N. Y.  
Armstrong Cork & Insulating Co., St. Paul, Minn.  
Atlas Plywood Corp., Boston, Mass.  
Automatic Oil Heat Co., St. Paul, Minn.  
The Atmospheric Engineering Co., Houston, Texas.  
Automatic Reclosing Circuit Breaker Co., Columbus, Ohio.  
F. E. Beebe, Cleveland, Ohio.  
Benjamin Electric Mfg. Co., Chicago, Ill.  
Bishop & Babcock Sales Co., Cleveland, Ohio.  
Bohn Refrigerator Co., St. Paul, Minn.  
The D. W. Bosley Co., Chicago, Ill.  
Bradley-Hurtz Co., Chicago, Ill.  
George B. Bright Co., Detroit, Mich.  
Brunswick-Kroeschell Co., New Brunswick, N. J.  
Bryant Electric Refrig. Corp., New Milford, Pa.  
Bush Mfg. Co., Hartford, Conn.  
Champion Electric Co., Chicago, Ill.  
Challenge Refrigerator Co., Grand Haven, Mich.  
Cleveland Iceless Cooler Co., Cleveland, Ohio.  
Clifford Mfg. Co., Boston, Mass.  
Climax Electrical Refrigeration Co., Detroit, Mich.  
Commonwealth Brass Corp., Detroit, Mich.  
Cooke Seal Ring, Chicago, Ill.  
Copeland Products, Inc., Detroit, Mich.  
Cope-Swift Co., Detroit, Mich.  
Cordley & Hayes, New York, N. Y.  
Cork Import Corp., New York, N. Y.
- Creamery Package Mfg. Co., Chicago, Ill.  
Crystal Refrigerator Co., Freemont, Neb.  
Davies B. & E. Co., Philadelphia, Pa.  
Day-Fan Electric Co., Dayton, Ohio.  
Dent Hardware Co., Fullerton, Pa.  
Detroit Stamping Co., Detroit, Mich.  
Dole Refrigerating Machine Co., Chicago, Ill.  
The "Dry-Kold" Refrigerator Co., Niles, Mich.  
Dry-Zero Corp., Chicago, Ill.  
G. M. Dwelley, Inc., Detroit, Mich.  
H. W. Dyer, New York, N. Y.  
The D. A. Ebinger Sanitary Mfg. Co., Columbus, Ohio.  
Electrical Testing Laboratories, New York, N. Y.  
Electrograph Co., Detroit, Mich.  
Electro-Kold Corp., Spokane, Wash.  
Electrolux Co., New York, N. Y.  
Empire Electric Machinery Co., Joplin, Mo.  
Erie Art Metal Co., Erie, Pa.  
Esco Cabinet Co., West Chester, Pa.  
Excelsior Motor Mfg. & Supply Co., Chicago, Ill.  
Fedders Mfg. Co., Buffalo, N. Y.  
Fern-Glover Refrigerator Corp., Cincinnati, Ohio.  
The Ferro Enamel Supply Co., Cleveland, Ohio.  
Fessler Mfg. Co., Kansas City, Mo.  
The Filtrine Mfg. Co., Brooklyn, N. Y.  
Flint Foundry Co., Flint, Michigan.  
Flintlock Corp., Detroit, Mich.  
Franklin Air Compressor Corp., Norristown, Pa.  
Frick Co., Waynesboro, Pa.  
Gardner, Gardner & Baldwin, Springfield, Mass.  
Gem Appliance, Inc., New York, N. Y.  
General Electric Co., Cleveland, Ohio.  
General Electric Co., Schenectady, N. Y.  
General Necessities Corp., Detroit, Mich.
- General Refrigeration Co., Beloit, Wis.  
Geuder, Paeschke & Frey Co., Chicago, Ill.  
Gibson Refrigerator Co., Greenville, Mich.  
L. H. Gilmer Co., Tacony Philadelphia, Pa.  
Goodnow & Blake Mfg. Co., Detroit, Mich.  
Grand Rapids Brass Co., Grand Rapids, Mich.  
Gulf Oil Burner Co., Philadelphia, Pa.  
Haines Motor Service, Newark, N. J.  
Hale & Kilburn Co., Philadelphia, Pa.  
Harwell Rubber Co., Inc., New York, N. Y.  
Haskelite Mfg. Co., Chicago, Ill.  
Haven Mfg. Co., Milwaukee, Wis.  
Herrick Refrigerator & Cold Storage Co., Waterloo, Iowa.  
Holmes Products, Inc., New York, N. Y.  
Holsclaw Bros., Inc., Evansville, Ind.  
Hotel Hussmann, El Paso, Texas.  
Iceless Cabinet Accessories, Philadelphia, Pa.  
Icelect Corp., Omaha, Nebr.  
Iceless Cooler Corp., Chicago, Ill.  
Ideal Refrigeration Supply Co., Chicago, Ill.  
Illinois Refrigerator Co., Morrison, Ill.  
Imperial Brass Mfg. Co., Chicago, Ill.  
Industrial Controller Co., Milwaukee, Wis.  
Insulite Co., Chicago, Ill.  
International Nickel Co., New York, N. Y.  
Iron Mountain Co., Chicago, Ill.  
Jarow Products Corp., Chicago, Ill.  
Jewett Refrigerator Co., Buffalo, N. Y.  
Kel Ray Laboratories, Detroit, Mich.  
Kelvinator Corp., Detroit, Mich.  
Keokuk Refrigerating Co., Keokuk, Iowa.  
Kerotest Mfg. Co., Pittsburgh, Pa.  
Kitchen Aid Mfg. Co., Detroit, Mich.  
Kulair Corp., Philadelphia, Pa.
- The Lamson Co., Syracuse, N. Y.  
Ligonier Refrigerator Co., Ligonier, Ind.  
Luse-Stevenson Co., Chicago, Ill.  
Maas & Waldstein, Newark, N. Y.  
Maine Mfg. Co., Nashua, N. H.  
Marsden's Store Fixture House, Inc., E. Providence, R. I.  
May Oil Burner Corp., Baltimore, Md.  
McCord Radiator & Mfg. Co., Detroit, Mich.  
McCray Refrigerator Sales Corp., Kendallville, Ind.  
The Merchandise Mart, Chicago, Ill.  
Merchant & Evans Co., Philadelphia, Pa.  
Milwaukee School of Engineering, Milwaukee, Wis.  
Minier Mfg. Co., Peoria, Ill.  
Motors Metal Mfg. Co., Detroit, Mich.  
Mueller Brass Co., Port Huron, Mich.  
Norge Corp., Detroit, Mich.  
Northey Mfg. Co., Waterloo, Iowa.  
Parker Ice Machine Co., San Bernardino, Calif.  
Peerless Ice Machine Co., Chicago, Ill.  
Penn Electric Switch Co., Des Moines, Iowa.  
Peterson Spring Co., Detroit, Mich.  
Pierson & Larkin Co., Atlanta, Ga.  
President Hotel, Atlantic City, N. J.  
Poreclain Enamel & Mfg. Co., Detroit, Mich.  
Preferred Oil Burners, Inc., Peoria, Ill.  
Pulmosan Safety Equipment Corp., Brooklyn, N. Y.  
Refrigerating Equipment Liquidating Co., Harrisburg, Pa.  
Refrigeration Service Co., New York, N. Y.  
Reproduction Co., Boston, Mass.  
Rex Mfg. Co., Connorsville, Ind.  
Rhinelander Refrigerator Co., Rhinelander, Wis.  
Rice Products Co., Detroit, Mich.  
F. B. Riley & Associates, Detroit, Mich.  
Roessler & Hasslacher Chemical Co., Niagara Falls, N. Y.
- Rome Mfg. Co., Rome, N. Y.  
The Russ Mfg. Co., Cleveland, Ohio.  
Safety Regulator Co., Los Angeles, Calif.  
Savage Arms Corp., Utica, N. Y.  
Savory Hotel, Atlantic City, N. J.  
Savory, Inc., Buffalo, N. Y.  
Schliesmann Companies, New York, N. Y.  
C. Schmidt Co., Cincinnati, Ohio.  
Seeger Refrigerator Co., St. Paul, Minn.  
Serval Sales, Inc., Electrolux, Evansville, Ind.  
Serval Sales, Inc., Evansville, Ind.  
Sparklets, Inc., New York, N. Y.  
Taylor Co., Halsey W., Warren, Ohio.  
Tellite Mfg. Co., Chicago, Ill.  
Time-O-Stat Controls Corp., Elkhart, Ind.  
Trutliffe Wax Products Co., Milwaukee, Wis.  
Universal Cooler Corp., Detroit, Mich.  
U. S. Mineral Wool Co., New York, N. Y.  
Utilities Engineering Institute, Chicago, Ill.  
H. R. Van Deventer, Inc., New York, N. Y.  
Virginia Smelting Co., Boston, Mass.  
Wagner Electric Corp., St. Louis, Mo.  
Walraven Bros., Inc., Dallas, Texas.  
Warner Steel Products, Ottawa, Kansas.  
Wayne Co., Fort Wayne, Ind.  
Wayne Home Equipment Co., Fort Wayne, Ind.  
Chas. J. Webb Co., Philadelphia, Pa.  
Welsbach Co., Gloucester, N. J.  
Wildner Metal Co., Niles, Ohio.  
Williams Oil-O-Matic Heating Corp., Bloomington, Ill.  
Winters & Crampton Hfg. Co., Grand Rapids, Mich.  
E. J. Wirfs Organization, St. Louis, Mo.  
Wolverine Enameling Co., Detroit, Mich.  
Wolverine Tube Co., Detroit, Mich.  
Wood Conversion Co., Chicago, Ill.  
Zanesville Engineering Co., Zanesville, Ohio.

## —and 93 Advertising Agencies That Have Placed Advertising for Their Clients

- Aubrey & Moore, Chicago, Ill.  
N. W. Ayer & Son, Philadelphia, Pa.  
Aitkin-Kynett Co., Philadelphia, Pa.  
Advertising Producers Associated, Chicago, Ill.  
Harry Atkinson, Inc., Chicago, Ill.  
Horace C. Baker Co., Inc., Green Bay, Wis.  
Batten, Barton, Durstine & Osborn, New York, N. Y.  
Bellamy-Neff Co., Chicago, Ill.  
Julian J. Behr Co., Inc., Cincinnati, Ohio.  
Austin F. Bement Agency, Detroit, Mich.  
Blaker Advertising Agency, Inc., New York, N. Y.  
Breeding, Murray & Salzer, Philadelphia, Pa.  
Brooke, Smith & French, Inc., Detroit, Mich.  
Brooks of Illinois, Inc., Chicago, Ill.  
Thos. M. Bowers Advertising Agency, Chicago, Ill.  
Botsford-Constantine Co., Seattle, Wash.  
Bonsib, Inc., Fort Wayne, Ind.  
Campbell-Ewald Co., Detroit, Mich.  
Frank Comrie Co., Chicago, Ill.
- The Cramer-Krasselt Co., Milwaukee, Wis.  
Callaway & Associates, Inc., Boston, Mass.  
Wm. Cohen Co., Pittsburgh, Pa.  
R. C. Crane Advertising, Philadelphia, Pa.  
John Morris Combs, Philadelphia, Pa.  
Cutajar & Provost, New York, N. Y.  
George L. Dyer Co., New York, N. Y.  
Evans Associates, Chicago, Ill.  
Ewing, Jones & Higgins, Inc., Philadelphia, Pa.  
Freeze-Vogel-Crawford, Milwaukee, Wis.  
Freitag Advertising Agency, Atlanta, Ga.  
Gale & Pietsch, Inc., Chicago, Ill.  
Wm. J. Gallard & Associates, Newark, N. J.  
Russel T. Gray, Inc., Chicago, Ill.  
William K. Grimm, Elkhart, Ind.  
Greve Advertising Agency, Inc., St. Paul, Minn.  
General Advertising Co., Indianapolis, Ind.  
Gardner Advertising Agency, New York, N. Y.
- Grace & Holliday, Detroit, Mich.  
A. A. Gray & Co., Chicago, Ill.  
Hailey & Lewis, Inc., El Paso, Texas.  
Hazard Advertising Corp., New York, N. Y.  
Albert P. Hill Co., Inc., Pittsburgh, Pa.  
W. H. Holmes, Inc., Detroit, Mich.  
The Hoffman Bros. Co., Baltimore, Md.  
Holden, McKinney & Clark, Detroit, Mich.  
Chas. W. Hoyt Co., Inc., New York, N. Y.  
Henri-Hurst & MacDonald, Chicago, Ill.  
Heer Advertising Agency, Columbus, Ohio.  
Husband & Thomas Co., Inc., New York, N. Y.  
R. C. Hogan, Milwaukee, Wis.  
Irvine & Co., Chicago, Ill.  
Geo. J. Kirkgasser & Co., Chicago, Ill.  
Klau-VanPietersom-Dunlap-Younggreen, Milwaukee, Wis.  
Kramer Associates, New York, N. Y.  
Lampport & MacDonald Co., South Bend, Ind.  
Lyddon, Hanford & Kimball, Inc., New York, N. Y.
- Reed G. Landis Co., Chicago, Ill.  
The Littlehale Advertising Agency, New York, N. Y.  
Ray D. Lillibridge, New York, N. Y.  
Lord and Thomas & Logan, New York, N. Y.  
Low, Graham & Wallis, Chicago, Ill.  
Harry Latz, New York, N. Y.  
J. Horace Lytle Co., Dayton, Ohio.  
Mace Advertising Agency, Peoria, Ill.  
Allen G. Miller Co., Grand Rapids, Mich.  
Marschall & Pratt, New York, N. Y.  
Michaels & Heath, New York, N. Y.  
Morris-Harris Advertising Co., Chicago, Ill.  
Alfred A. Morse, New York, N. Y.  
Carroll Dean Murphy, Inc., Chicago, Ill.  
The Mumm-Romer-Jaycox Co., Columbus, Ohio.  
H. K. McCann Co., New York, N. Y.  
MacManus, Inc., Detroit, Mich.  
Nelson, Duncan & Harlow, Boston, Mass.  
R. J. Potts & Co., Kansas City, Mo.
- R. C. Pulliam, Detroit, Mich.  
Porter, Eastman & Byrne, Chicago, Ill.  
Quinlan Co., Chicago, Ill.  
John Ring, Jr., Advertising Co., St. Louis, Mo.  
Ross Advertising, Inc., Fort Wayne, Ind.  
Ruthrauff & Ryan, Inc., New York, N. Y.  
Roche Advertising Co., Chicago, Ill.  
Walter B. Snow & Staff, Boston, Mass.  
R. E. Sandmeyer Co., Chicago, Ill.  
Rolf C. Spinning, Inc., Detroit, Mich.  
Tracy-Locke-Dawson, Dallas, Texas.  
The Van Allen Company, Detroit, Mich.  
Walker Downing Advertising Co., Pittsburgh, Pa.  
John L. Weirango & Staff, Inc., Grand Rapids, Mich.  
Winscon & Sullivan, New York, N. Y.  
Williams & Cunningham, Chicago, Ill.  
Worley & Dietrich, Buffalo, N. Y.  
Roland C. Wallower, Harrisburg, Pa.

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## Kelvinator Men Attend Baltimore Regional Meeting Held at Lord Baltimore Hotel on Feb. 15



Several hundred visiting Kelvinator dealers and distributors brought the one-day Baltimore regional meeting to a successful close with a banquet at the Lord Baltimore Hotel, Baltimore, Md., on Feb. 15.

## NEW TREATISE GIVES DETAILED DISCUSSION OF CORK INSULATION

"CORK Insulation," by P. Edwin Thomas, B. S., is a treatise on the sources, harvesting, manufacture, distribution, and uses of cork and cork insulation products. The book covers 534 pages.

Subject matter is divided into five major parts, as follows: the cork industry; the study of heat; the insulation of cold storage plants and cold rooms in general; the insulation of household refrigerators, ice cream cabinets and soda fountains; and the insulation of cold pipe lines and tanks, refrigerator cars, industrial buildings, and special equipment.

Chapter headings are: the origin of cork, cork strippings, uses of corkwood, and utilization of cork waste; early forms of cork insulation; discovery of Smith's consolidated cork; extent of the cork industry; heat, temperature and thermal expansions; measurement of heat, change of state and humidity; transfer of heat; determination of the heat conductivity of various materials; requirements of a satisfactory insulation for cold storage temperatures; proper thickness of corkboard to use and structural suggestions; complete specifications for the erection of corkboard; complete directions for the proper application of corkboard insulation; history of refrigeration employed to preserve foodstuffs; development of the corkboard insulated household refrigerator; development of the corkboard insulated ice cream cabinet; and the refrigerated soda fountain.

Subjects of special interest to the electric refrigeration industry are: heat loss through insulation; results of tests by authorities on many materials; essential requirements of an insulation; permanent insulating efficiency; economic value of insulating materials; importance of proper insulation design; circulation, ventilation, and humidification; emulsified asphalt; scope and purpose of insulation specifications; details of household refrigerator construction; the testing of household refrigerators; details of ice cream cabinet construction; how to test ice cream cabinets; specifications for refrigerated soda fountains; and protection of insulation against moisture.

The book contains 185 articles, 31 tables, 243 illustrations, an appendix, and a topical index. It is 6 by 9 inches, and sells at \$3.50 in cloth binding or \$4.50 in Morocco.

## GEM ELECTRIC KITCHEN MECHANIC DOES TASKS OF FOOD PREPARATION

The Gem Electric Kitchen Mechanic is a product designed for lightening kitchen work and placed on the market by Gem Appliances, Inc., 280 Madison Ave., New York.

The appliance comes equipped with mixer, beater, whipper, polishing buffer, and one 5-quart bowl of seamless steel, heavily tinned. It weighs approximately 40 pounds and stands 17½ inches high. It has two speeds. Additional equipment consists of ice cream freezer, meat and food chopper, vegetable slicer, mayonnaise oil dropper, fruit juice extractor, wire whipper, pastry knife, dough hook, and coffee grinder.

A folder points out a few of the jobs where the Gem Electric Kitchen Mechanic is especially applicable as in beating eggs, making candies and icings, whipping creams and meringues, freezing ice cream, making mayonnaise, stirring muffin batter, preparing hash and croquettes, preparing potatoes for potato chips, and mashing potatoes. It is pointed out that the appliance is as applicable to the luncheonette and delicatessen store as to the household kitchen.

## Index of Advertisers In This Issue

	Page No.
American Radiator Co.	18
American Engineering Co.	30
Ansul Chemical Co.	32
Atlas Plywood Corp.	28
Automatic Reclosing Circuit Breaker Co.	41
Bohn Refrigerator Co.	31
Bosley, D. W. Co.	38
Brunswick-Kroeschell Co.	42
Champion Electric Co.	12
Clifford Mfg. Co.	22
Commonwealth Brass Co.	8
Copeland Products, Inc.	2
Cordley & Hayes	42
Cork Import Corp.	27
Creamery Package Mfg. Co.	40
Crystal Refrigerator Co.	39
Davies B. & E. Co.	48
Dayfan Electric Co.	43
Dry-Zero Corp.	23
Dwelle, G. M., Inc.	38
Ebinger, D. A., Sanitary Mfg. Co.	20
Electrical Testing Laboratories	39
Fedders Mfg. Co.	11
Ferro Enamel Supply Co.	42
Flint Foundry	37
Flintlock Corp.	40
Franklin Air Compressor Corp.	43
Frick Co.	5
Gem Appliance, Inc.	10
General Electric Co.	27
General Refrigeration Co.	4
Goodnow & Blake Mfg. Co.	32
Grand Rapids Brass Co.	31
Heideman, F. J.	38
Halsey-Taylor Co.	28
Holmes Products, Inc.	8
Hotel Hussmann	42
Icelect Corp.	18
Iceless Cabinet Accessories	48
Illinois Refrigerator Co.	22
Imperial Brass Co.	43
Insulite Co.	39
International Nickel Co.	5
Kelray Laboratory	48
Kelvinator Corp.	7
Kerotest Mfg. Co.	42
McCord Radiator & Mfg. Co.	38
McCray Refrigerator Co.	17
Maas & Waldstein	43
May Oil Burner Corp.	10
Merchant & Evans	21
Motors Metal Mfg. Co.	48
Mueller Brass Co.	25
Norge Corp.	32
Northey Mfg. Co.	41
Peerless Ice Machine Co.	40
Pierson & Larkin Refrigerating Corp.	41
Porcelain Enamel & Mfg. Co.	40
Refrigeration Service Co., Inc.	48
Reproductions Co.	4
Rex Mfg. Co.	6
Rhineland Refrigerator Co.	26
Riley, F. B., & Associates	11
Rome-Turney Radiator Co.	42
Savage Arms Corp.	6
Savoy Hotel	44
Seeger Refrigerator Co.	19
Servel Sales, Inc.	9 and 47
Sparklets, Inc.	3
Time-O-Stat Controls Co.	37
Trutullife Wax Products	39
Utilities Engineering Institute	37
U. S. Mineral Wool Co.	44
Van Deventer, H. R., Inc.	48
Virginia Smelting Co.	18
Wagner Electric Corp.	30
Wayne Home Equipment Co.	12
Williams Oil-O-Matic Heating Corp.	20 and 30
Winters & Crampton Mfg. Co.	29
Wirfs, E. J., Org., Inc.	44
Wolverine Tube Co.	39
Wood Conversion Co.	26
Zanesville Engineering Corp.	32

SERVEL SALES, INC., EVANSVILLE, IND., has several openings for field contact men.

We very much prefer to employ men for these positions who are experienced refrigeration men and whose training has been along the lines of field promotion, organization of dealer set-ups and actual successful retail selling. The positions are permanent, and we believe offer an opportunity which should attract the interest of highest grade men trained in refrigeration.

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